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99TH CONGRESS
2d Session

SENATE

REPORT
99-265

IMPLEMENTING THE COORDINATED OPERATION AGREEMENT FOR THE CENTRAL VALLEY PROJECT AND STATE WATER PROJECT, CALIFORNIA, TO IMPLEMENT THE SUISUN MARSH PRESERVATION AGREEMENT, CALIFORNIA, TO AMEND THE SMALL RECLAMATION PROJECTS ACT OF 1956, AS AMENDED, AND TO VALIDATE CERTAIN CONTRACTS

MARCH 25 (legislative day, MARCH 18), 1986.—Ordered to be printed

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Mr. MCCLURE, from the Committee on Energy and Natural Resources, submitted the following

REPORT

together with

ADDITIONAL AND MINORITY VIEWS

[To accompany H.R. 3113]

The Committee on Energy and Natural Resources, to which was referred the Act (H.R. 3113) providing for the coordinated operation of the Central Valley project and the State water project in California, having considered the same, reports favorably thereon with an amendment to the text and an amendment to the title and recommends that the act, as amended, do pass.

The amendments are as follows:

1. Strike out all after the enacting clause and insert in lieu thereof the following:

TITLE I—COORDINATED OPERATION AGREEMENT

SEC. 101. That the Secretary of the Interior is hereby authorized and directed to execute and implement the "Agreement Between the United States of America and the Department of Water Resources of the State of California for Coordinated Operation of the Central Valley Project and the State Water Project" (dated May 8, 1985).

SEC. 102. The Secretary of the Interior shall not contract for the delivery of more than 75 percent of the firm annual yield of the Central Valley Project not currently committed under long-term contracts until one year after the Secretary has transmitted to the Congress a feasibility report, together with his recommendations, on the "Refuge Water Supply Investigation, Central Valley Basin, California.".

SEC. 103. The Secretary of the Interior shall include in all new or amended contracts for the delivery of water from the Central Valley Project a provision providing for the automatic adjustment of rates by the Secretary of the Interior if it is

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found that the rate in effect may not be adequate to recover the appropriate share of the existing Federal investment in the Project by the year 2030. The contracts shall also include a provision authorizing the Secretary of the Interior to adjust determinations of ability to pay every five years.

SEC. 104. The Secretary of the Interior shall include in all new or amended contracts for the delivery of water from the Central Valley Project provisions ensuring that all deficits (outstanding or hereafter arising) in the payment of operation and maintenance costs of the central Valley Project are repaid under the terms of such new or amended contracts, together with interest on any such deficits which arise on or after October 1, 1985, at a rate equal to the average market yields on outstanding marketable obligations of the United States with remaining periods to maturity comparable to the applicable reimbursement period of the Project, adjusted to the nearest one-eighth of 1 percent.

TITLE II—SUISUN MARSH PRESERVATION AGREEMENT

SEC. 201. The Secretary of the Interior is authorized to execute and implement the agreement between the Department of the Interior, the State of California and the Suisun Resources Conservation District (dated November 1, 1985).

SEC. 202. The costs of implementing the agreement provided in section 201 of this title shall be shared by the Bureau of Reclamation and the California Department of Water Resources in strick accordance with article 12 of that agreement, provided that—

(a) payments made by the Secretary of the Interior shall not exceed 40 percent of the construction costs incurred under articles 6, 7 and 8 of the agreement, or $50,000,000, whichever is less, plus or minus such amounts as are justified by reason of ordinary fluctuations in construction costs as indicated by engineering cost indices applicable to the types of construction involved therein;

(b) the Federal share of continuing annual operation and maintenance costs, including monitoring, shall not exceed 40 percent of the actual operation and maintenance costs; and

(c) the costs incurred by the United States for construction and for annual operation and maintenance in connection with the implementation of said agreement shall constitute an integral part of the cost of the Central Valley Project. The Secretary shall allocate such costs to the reimbursable and nonreimbursable purposes served by the project.

SEC. 203. Costs incurred both before and after the date of execution of the agreement herein authorized are to be included in the total for determining the Federal share of construction, operating, and maintenance costs.

SEC. 204. There are authorized to be appropriated for the implementation of the agreement referred to in section 201 of this title $50,000,000 plus or minus such amounts, if any, as may be justified by reason or ordinary fluctuations in construction costs as indicated by engineering costs indices applicable to the types of construction involved therein and, in addition thereto, in accordance with subsection 201(b) of this title, such sums as may be required for operation and maintenance; *Provided,* That no Federal funds may be expended pursuant to this title in advance of appropriations therefor: *Provided further,* That appropriations pursuant to this title shall remain available until expended without any fiscal year limitation.

TITLE III—SMALL RECLAMATION PROJECTS ACT

SEC. 301. As used in this title, the term "the Act" means the Small Reclamation Projects Act of 1956, as amended (43 U.S.C. 422a et seq.).

SEC. 302. Section 1 of the Act is amended by inserting after the word "laws" ", with emphasis on rehabilitation and betterment of existing projects for purposes of significant conservation of water, energy and the environment and for purposes of water quality control,".

SEC. 303. The second sentence of section 3 of the Act is amended by striking "$1,000" and inserting in lieu thereof "$5,000".

SEC. 304. (a) Section 4(b) of the Act is amended by inserting "(1)" after (b) and by striking "by loan and grant under this Act" and inserting in lieu thereof "by loan and grant of Federal funds".

(b) Section 4(b) of the Act is amended by adding the following new paragraph at the end thereof:

"(2) The Secretary shall require each organization to contribute toward the cost of the project (other than by loan and/or grant or Federal funds) an amount equal to 25 percent or more of the allowable estimated cost of the project: *Provided,* That the Secretary, at his discretion, may reduce the amount of such contribution to the

extent he determines that the organization is unable to secure financing from other sources under reasonable terms and conditions, and shall include letters from lenders or other written evidence in support of any finding of any applicant's inability to secure such financing in any project proposal transmitted to the Congress: *Provided further,* That under no circumstances shall the Secretary reduce the amount of such contribution to less than 10 percent of the allowable estimated total project costs. In determining the amount of the contribution as required by this paragraph, the Secretary shall credit toward that amount the cost of investigations, surveys, engineering, and other services necessary to the preparation of proposals and plans for the project as required by the Secretary, and the costs of lands and rights-of-way required for the project, and the $5,000 fee described in section 3 of this Act. In determining the allowable estimated cost of the project, the Secretary shall not include the amount of grants accorded to the organization under section 5(b).".

SEC. 305. Section 4(c) of the Act is amended by inserting the following after the first sentence: "Each project proposal transmitted by the Secretary to the Congress shall include a certification by the Secretary that an adequate soil survey and land classification has been made, or that the successful irregability of those lands and their susceptibility to sustained production of agricultural crops by means of irrigation has been demonstrated in practice. Such proposal shall also include an investigation of soil characteristics which might result in toxic or hazardous irrigation return flows.".

SEC. 306. Section 5(b) of the Act is amended by striking everything after the words "joint use facilities properly allocable to fish and wildlife enhancement or public recreation;" and substituting the following in lieu thereof:

"(5) that portion of the estimated cost of constructing the project which, if it were constructed as a Federal reclamation project, would be properly allocable to functions, other than recreation and fish and wildlife enhancement and flood control, which are nonreimbursable under general provisions of law applicable to such projects; and (6) that portion of the estimated cost of constructing the project which is allocable to flood control and which would be nonreimbursable under general provisions of law applicable to projects constructed by the Secretary of the Army.".

SEC. 307. (a) Section 5(c)(1) of the Act is amended by striking "fifty" and inserting in lieu thereof "forty".

(b) Section 5(c)(2) of the Act is amended to read as follows: "interest, as determined by the Secretary of the Treasury, as of the beginning of the fiscal year in which the contract is executed, on the basis of the average market yields on outstanding marketable obligations of the United States with remaining periods to maturity comparable to the applicable reimbursement period of the project, adjusted to the nearest one-eighth of 1 percent on the unamortized balance of any portion of the loan:

"(A) which is attributable to furnishing irrigation benefits in each particular year to land held in private ownership by a qualified recipient, as such term is defined in section 202 of the Reclamation Reform Act of 1982, in excess of nine hundred and sixty irrigable acres, or by a limited recipient, as such term is defined in section 202 of the Reclamation Reform Act of 1982, in excess of three hundred and twenty irrigable acres; or

"(B) which is allocated to domestic, industrial, or municipal water supply, commercial power, fish and wildlife enhancement, or public recreation except that portion of such allocation attributable to furnishing benefits to a facility operated by an agency of the United States, which portion shall bear no interest.".

(c) The remainder of section 5(c) of the Act is stricken in its entirety.

SEC. 308. Section 8 of the Act is amended by adding at the end thereof the following sentence: "The Secretary shall transfer to the Fish and Wildlife Service or to the National Marine Fisheries Service, out of appropriations or other funds made available under this Act, such funds as may be necessary to conduct the investigations required to carry out the purposes of this section.".

SEC. 309. (a) Section 10 of the Act is amended in the first sentence by inserting before ": *Provided*" "and, effective October 1, 1986, not to exceed an additional $600,000,000".

(b) Section 10 of the Act is further amended by adding at the end thereof the following: "Not more than 20 percent of the total amount of additional funds authorized to be appropriated effective October 1, 1986, for loans and grants pursuant to this Act shall be for projects in any single State.".

SEC. 310. The provisions of sections 303 and 308 of this title shall take effect upon enactment of this title. The provisions of sections 304(a) and 305 of this title shall be applicable to all proposals for which final applications are received by the Secretary

after January 1, 1986. The provisions of sections 302, 304(b), 306, and 307 shall be applicable to all proposals for which draft applications are received by the Secretary after February 1, 1986.

TITLE IV—VALIDATION OF CONTRACTS

SEC. 401. The Federal Power Act (Act of June 10, 1920, 41 Stat. 1063; 16 U.S.C. 791a et. seq., and Acts amendatory thereof and supplementary thereto) is amended in section 10(e) (16 U.S.C. 803(e)) by deleting "Commission." and inserting in lieu thereof:

"Commission: *Provided, however,* That no charge shall be assessed for the use of any Government dam or structure by any licensee if, before January 1, 1985, the Secretary of the Interior has entered into a contract with such licensee that meets each of the following requirements:

"(A) The contract covers one or more projects for which a license was issued by the Commission before January 1, 1985.

"(B) The contract contains provisions specifically providing each of the following:

"(i) A powerplant may be built by the licensee utilizing irrigation facilities constructed by the United States.

"(ii) The powerplant shall remain in the exclusive control, possession, and ownership of the licensee concerned.

"(iii) All revenue from the powerplant and from the use, sale, or disposal of electric energy from the powerplant shall be, and remain, the property of such licensee.

"This paragraph shall apply to any project covered by a contract referred to in this paragraph only during the term of such contract unless otherwise provided by subsequent Act of Congress.".

2. Amend the title so as to read: "A bill to implement the Coordinated Operations Agreement, the Suisun Marsh Preservation Agreement, and to amend the Small Reclamation Projects Act of 1956, as amended, and for other purposes.".

PURPOSE

As ordered reported, title I of H.R. 3113, would authorize the Secretary of the Interior to enter into and implement an agreement [1] with the California Department of Water Resources for coordinated operation of the Bureau of Reclamation's Central Valley Project (CVP) with the State of California's State Water Project (SWP); title II of the Act would authorize the Secretary of the Interior to execute and implement the Suisun Marsh Preservation Agreement [2] with the State of California and the Suisun Resources Conservation District; title III provides for substantive amendments to the Small Reclamation Projects Act of 1956, as amended, including an increase in the authorization ceiling of $600 million; and title IV would amend section 10(e) of the Federal Power Act to provide that no "falling water charge" or other annual charge shall be assessed by the Federal Energy Regulatory Commission against a licensee utilizing irrigation facilities constructed by the United States if a contract has previously been entered into which provides that revenues from hydroelectric powerplants constructed and owned by the licensee at such irrigation facilities shall be the property of the licensee.

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[1] Reprinted in Appendix to this report.
[2] Ibid.

Background

The Central Valley Project (CVP) and the State Water Project (SWP) are California's largest water resources development projects. The CVP is operated by the Bureau of Reclamation and the SWP is operated by the California Department of Water Resources. The two projects have commingled waters and interrelated operations. In many instances, the projects produce joint environmental effects.

The facilities of the CVP store, regulate, and divert flows of several rivers, principally the Sacramento and the San Joaquin, which flow into the Sacramento/San Joaquin Delta ("Delta") and then into San Francisco Bay. The CVP pumps water from the Delta and upstream points and exports it by means of canals to various locations, principally the San Joaquin Valley.

The SWP stores, regulates, and diverts flows of the Feather River, a major tributary of the Sacramento River. The SWP exports water from the Delta to the southern San Joaquin Valley, southern California, and the San Francisco Bay area.

The CVP and the SWP differ significantly in terms of water use, project yields, and export capacity. Ninety-five percent of the water delivered by the CVP goes to agricultural uses. By comparison, water delivered by the SWP goes about equally to agricultural and urban uses. The estimated yield of the CVP (water made available by the project on a reliable basis) is approximately three times greater than the SWP yield: 9.4 million acre-feet per year as compared to 3.1 million acre-feet per year. Finally, the SWP has a greater export capacity from the Delta than does the CVP: 6,400 cfs (cubic feet per second) versus 4,900 cfs.

Because the storage and export capacities of the CVP and the SWP differ and because the projects use some of the same water bodies, coordinated operation under the Coordinated Operation Agreement would provide benefits to each project in terms of greater operational efficiency. More importantly, granting the Secretary of the Interior the authority to enter into the COA is essential for ensuring both the maintenance of water quality standards in the Delta and the viability of the SWP in water short years.

In 1978, the California Water Resources Control Board set Delta water quality standards in Decision 1485 and held the CVP and the SWP jointly and severally responsible for maintaining these standards. Thus far, however, the Bureau of Reclamation has taken the position that it does not have the legal authority to make water releases for purposes of maintaining Delta water quality standards to the extent that such maintenance would require any reduction of exports to its contractors (water users). The result is that in dry years, the SWP alone would be forced to make water releases sufficient to maintain Delta standards which would in turn require severe reduction of water allotments to SWP contractors.

Execution of the COA would spread the potential burden of water reductions in dry years across both projects' contractors, thus lessening the impact on the SWP. This sharing of the responsibility for maintaining Delta water quality in dry years is a critical aspect of the COA which, in light of the Bureau of Reclamation's interpretation of its legal authority, makes legislative action

necessary. In other respects, the CVP and the SWP have been in coordinated operation on a year-to-year basis since 1971, and with some modifications the COA largely formalizes the status quo. Pursuant to the COA:

> Both the CVP and the SWP would be committed to meeting water quality and outflow standards for the Delta that are extracted from the standards contained in the State Water Resources Control Board's Decision 1485. Article 11 of the COA requires that the CVP and SWP be operated to meet the current Decision 1485 water quality standards which are referenced and made a part of the COA as "Exhibit A."
>
> Mutually recognized annual water supplies of the two projects are established. CVP facilities built before the SWP are recognized as having the water supply yield they would have had if the later facilities had not been built. The CVP and the SWP have equal claims to the remaining water.
>
> The COA would also provide for cooperative utilization of the facilities of the two projects for water conveyance and sales. Under the COA, conveyance through the other project's facilities would occur during times of project maintenance, to minimize adverse impacts on young striped bass in the Delta during May and June, and at such times when the SWP has excess capacity and the CVP needs to convey water for other purposes.

Implementation of the COA would free a substantial block of CVP water (estimates range up to 1.1 million acre-feet annually) for future long term water service contracts. There have been numerous requests for additional water supplies by current contractors. Delivery of some of the additional requested supplies would require the construction of new conveyance facilities while other supplies could be contracted for almost immediately.

During the consideration of H.R. 3113 by the Committee, various wildlife interests expressed concern that maintenance of existing wildlife refuges within the Central Valley Basin may require the allocation of a portion of the additional firm CVP yield possible by the implementation of the COA. In response, the Committee adopted an amendment that prohibits the Secretary of the Interior from contracting for more than a certain portion of the firm annual yield of the Central Valley project not currently committed under long term contract until 1 year after the Secretary of the Interior has transmitted to the Congress, along with his recommendations, a study on refuge water supply needs of the Central Valley Basin. The study is underway and due to be completed in October of 1987.

During Committee consideration of H.R. 3113, questions were also raised concerning contract repayment requirements and the sufficiency of rates to recover the Federal investment as well as operation and maintenance costs of the Central Valley Project. These concerns were also addressed by the Committee Amendment.

A critical environment aspect of the operation and management of the CVP and SWP is the effect of the projects on water quality standards in the Suisun Marsh area, located approximately 40 miles northeast of San Francisco. The Suisun Marsh is the largest marsh in California encompassing more than 10 percent of the State's remaining wetlands. The Marsh consists of approximately

84,000 acres: 57,000 acres in wetland habitat and 27,000 acres in bays and waterways. Eighty percent of the wetland habitat is controlled by privately-owned duck clubs; 17 percent lies within State Wildlife Management Areas; and 3 percent consists of tidal lands. Although the abundance and diversity of the wetlands vegetation supports more than 250 species of fish and wildlife, its prime importance is its value to migratory birds. California is the wintering ground for 60 percent of the waterfowl population of the Pacific Flyway; Suisun Marsh harbors a substantial portion of these birds.

Salinity encroachment in the Marsh has become an increasing problem due to increased fresh water use in the Bay area, the San Joaquin Valley and the Central Valley. Ocean saltwater intrudes into the Marsh when the freshwater outflows from the Delta are decreased below the level necessary to prevent the tides from carrying saltwater upstream from the upper San Francisco Bay. Salinity inhibits the growth of plants necessary to provide food for waterfowl.

In May of 1978, the State of California in a report on the problems associated with management of the Marsh recommended that:

> It is imperative that steps be taken now, even though the relative responsibility for the impacts of the SWP, CVP, and nonproject operations have not yet been determined to protect those portions of the marsh most adversely affected by upstream use.

Congress initially addressed the water quality problems of the Suisun Marsh with enactment of Public Law 96-495, the Suisun Marsh Preservation and Restoration Act of 1979 which authorized limited structural efforts, and a study, directed towards mitigating adverse effects of the CVP on the Marsh. There followed 5 years of negotiations between the California Department of Water Resources, California Department of Fish and Game, the Suisun Resource Conservation District, and the Bureau of Reclamation for the purposes of reaching an agreement for achieving the water quality standards desired for the Marsh area.

As passed by the House, H.R. 3113 did not address the Suisun Marsh issue as negotiations on the agreement were still underway. Agreement was reached on November 1, 1985 between all the parties concerned and the Committee amended H.R. 3113 to reflect this agreement and authorize the Secretary of the Interior to execute and implement the agreement and to construct related facilities. Absent the agreement and construction of the facilities, achievement of water quality standards could require the release of up to 2 million acre-feet of water (1.2 million acre-feet from the CVP) during dry years. Such a release would reduce the additional CVP yield made available by the COA by at least 750,000 acre-feet. To fully address the water quality needs of the Delta and Suisun Marsh requires implementation of both the COA and the Suisun Marsh Preservation Agreement.

Relevant to the issues of water conservation and related development efforts in California and the remaining western reclamation States, including Hawaii, are the activities undertaken pursuant to the Small Reclamation Projects Act of 1956, Public Law 84-984. The primary purpose of the program established by the Act is to

unable water user organizations in the 17 Western States and Hawaii to obtain loans and/or grants for the construction of small water resource projects independently from the more formal and time consuming procedures required for authorization of Federal projects under the Reclamation Act of 1902 as amended and supplemented.

Projects may be single purpose irrigation or drainage, or they may be multi-purpose and include in addition to irrigation, municipal and industrial water, fish and wildlife enhancement, outdoor recreation, flood control, or hydroelectric power. Grants can be made for costs allocated to flood control and for about 50 percent of the costs allocated to fish and wildlife enhancement and outdoor recreation. Grants under the program have amounted to only about 3 percent of the total program. The costs allocated to municipal and industrial water supplies, hydroelectric power, the loan portion of the costs allocated to fish and wildlife and outdoor recreation, and the costs associated with serving lands in excess of the acreage limitations of Reclamation law are reimbursable with interest. The interest rate for fiscal year 1985 was 10⅞ percent.

Each loan applicant provides for financing of certain initial costs such as land and feasibility studies. From 1957 to 1970, the non-Federal up-front contribution averaged 11 percent. From 1974 to date, the non-Federal up-front contribution has averaged approximately 20 percent.

The maximum allowable loan and/or grant cannot exceed two-thirds of the total project cost. The total project cost ceiling is established at $15 million (January 1971 prices) and is indexed for inflation. The project ceiling was $41 million for calendar year 1985 with a maximum loan and/or grant of approximately $26 million.

Under the current program, loans are to be repaid in the shortest practicable time, but in no event, longer than 40 years from the date when the principal benefits of the project become available. The most recent loans have repayments periods from 25 to 30 years.

The current authorization ceiling of $600 million in only adequate to complete loans already approved. Statistics on the program as of January 16, 1986 are as follows:

SMALL RECLAMATION PROJECTS DISPOSITION OF $600 MILLION APPROPRIATION CEILING, JANUARY 16, 1986

	Loan amount	Grant amount	Total Federal	Contribution	Total project
Completed	$230,670,739	$5,283,444	$235,954,183	$45,154,097	$281,108,280
Administration			10,200,000		10,200,000
Under construction	241,461,127	19,539,166	261,000,293	53,050,670	314,050,963
Approved	44,960,000	9,405,000	54,365,000	19,586,000	73,951,000
Escalation			20,000,000		
Total	517,091,866	34,227,610	581,519,476	117,790,767	699,310,243
Ceiling			600,000,000		
Balance			18,480,524		

Bureau of Reclamation Code 705. Based on January 1, 1986 Status Report. Summary 3.

It is anticipated that the ceiling increase of $600 million will permit the program to operate for an additional 12 to 15 years.

The Committee amendment also amends section 10(e) of the Federal Power Act to provide that no "falling water charge" or other annual charge shall be assessed by the Federal Energy Regulatory Commission against a licensee utilizing irrigation facilities under certain conditions.

In 1969, the three irrigation districts of the Bureau of Reclamation's Columbia Basin project in Washington State entered into amended project repayment contracts with the Department of the Interior. The amended repayment contracts provide that the irrigation districts may construct hydroelectric facilities within the project area and retain all resulting revenues. The irrigation districts have argued before the Federal Energy Regulatory Commission (FERC) that these amended contracts preclude the FERC from imposing any charges pursuant to section 10(e) of the Federal Power Act on hydroelectric developments within the project. The FERC has rejected this argument, and the irrigation districts have appealed the FERC's ruling to the U.S. Court of Appeals for the D.C. Circuit.

The irrigation districts currently operate five small hydroelectric projects with one project under construction and one additional site licensed. The amendment would affect three projects.

Consideration of relate legislation during the 98th Congress revealed that a similar contractual relationship exists in connection with the Salt River project in Arizona. The contract between the United States and the Salt River project was entered into in 1917. The Columbia Basin Project and the Salt River Project are the only projects identified by the Administration where such contracts exist. Legislation similar or identical to title IV of the Committee amendment has passed both the House and the Senate.

In amending and reporting H.R. 3113, the Committee has sought to address several relevant water issues in the context of one legislative proposal for consideration by the Senate.

Legislative History

As ordered reported, H.R. 3113 combines elements of four measures in the 99th Congress: H.R. 3113, providing for the coordinated operation of the Central Valley project and the State water project in California; S. 1192, to implement the Coordinated Operation Agreement; S. 1171, to amend the Small Reclamation Projects Act of 1956, as amended; and S. 953, to validate contractual relationships between the United States and various non-Federal entities.

H.R. 3113 was introduced on July 30, 1985, by Congressmen Miller (California), Coelho, and Lehman, and was reported by the House Committee on Interior and Insular Affairs on September 9, 1985 (H. Rept. 99-257). H.R. 3113 passed the House on September 9, 1985. Although hearings were not held on the text of H.R. 3113 by the House Committee, oversight hearings on the Coordinate operation agreement were held before the Subcommittee on Water and Power Resources on May 23, 1985 (unprinted).

S. 1192 was introduced on May 22, 1985, by Senators Wilson and Cranston and was referred to the Committee on Energy and Natural Resources where a hearing was held before the Subcommittee on Water and Power on July 16, 1985 (S. Hrg. 99-258).

S. 1171 was introduced on May 20, 1985, by Senators McClure, Wilson, Cranston, DeConcini, Abdnor, Goldwater, Hart, Melcher, and Armstrong, and was referred to the Committee on Energy and Natural Resources where a hearing was held before the Subcommittee on Water and Power on July 16, 1985 (S. Hrg. 99-258). A companion measure, H.R. 2025, was introduced on April 4, 1985 by Congressmen Udall, Bereuter, Brown (California), Chappie, Coelho, Daschle, Fazio, Lehman, Lewis (California), Morrison (Washington), Packard, Strang, Vucanovich, Mrs. Smith (Nebraska), Lagomarsino, Pashayan, McCain, Stump, Hunter, Thomas (California), Mineta, McCandless, Martinez, and Dorgan. The bill was referred to the House Committee on Interior and Insular Affairs where a hearing (unprinted) was held on July 17, 1985 before the Subcommittee on Water and Power Resources. H.R. 2025 is presently pending before the Subcommittee. In the 98th Congress, similar legislation, S. 1981 and H.R. 4444 was introduced in both the House and the Senate. Congress adjourned prior to final consideration.

S. 953 was introduced on April 18, 1985, by Senators Evans and Gorton. S. 953 was reported by the Committee on Energy and Natural Resources on June 19, 1985 (S. Rept. 99-87) and was passed by the Senate on July 9, 1985. A provision similar to S. 953 was included in S. 1132 in the 98th Congress (S. Rept. 98-363). S. 1132 was twice passed by unanimous consent in the Senate and passed once by the House (H. Rept. 98-1052). However, Congress adjourned before a final version of S. 1132 could be acted upon.

The Senate Committee on Energy and Natural Resources considered H.R. 3113 in open business session on November 20, December 11, and December 17, 1985, and January 29, February 6, February 26, and March 6, 1986. By majority vote of a quorum present during the open business session on March 6, 1986, the Committee ordered reported H.R. 3113 with an amendment in the nature of a substitute and an amendment to the title.

Committee Recommendation and Tabulation of Votes

The Senate Committee on Energy and Natural Resources, in an open business session on March 6, 1986, by majority vote of a quorum present, recommended that the Senate pass H.R. 3113, if amended as described herein.

The rollcall vote on reporting the measure was 13 yeas and 5 nays as follows:

YEAS	NAYS
Mr. McClure	Mr. Nickles
Mr. Hatfield*	Mr. Bumpers
Mr. Weicker*	Mr. Metzenbaum*
Mr. Domenici	Mr. Bradley
Mr. Wallop*	Mr. Rockefeller
Mr. Warner	
Mr. Murkowski*	
Mr. Hecht	
Mr. Evans	
Mr. Johnston	
Mr. Ford	
Mr. Melcher	
Mr. Bingaman	

*Indicates vote by proxy.

COMMITTEE AMENDMENTS

The Committee struck all after the enacting clause of H.R. 3113, and inserted a substitute text in lieu thereof. As ordered reported, H.R. 3113, in addition to authorizing the Secretary of the Interior to enter into and implement the Coordinated Operation Agreement for the Central Valley Project and State Water Project in California, also authorizes the Secretary to execute and implement the Suisun Marsh Cooperative Agreement, amends the Small Reclamation Projects Act of 1956, as amended, and amends section 10(e) of the Federal Power Act.

As referred to the Committee, H.R. 3113 amended the Act of August 26, 1937 (50 Stat. 850) to authorize and direct the Secretary of the Interior to operate the Central Valley Project, in conjunction with the State of California Water Project, so as to conform to State water quality standards and provide water of a certain quality at the intake of the Contra Costa Canal (a feature of the Central Valley Project). In addition, H.R. 3113 amends the Act of August 26, 1937, to provide that costs attributable to the Central Valley Project for the purposes of salinity control and complying with certain State water quality standards would be nonreimbursable project costs. The Congressional Budget Office estimated that about $50 million of the cost of the Central Valley Project would become nonreimbursable as a result of the cost reallocation mandated by H.R. 3113 and that any additional costs incurred to comply with new State water quality standards would also be nonreimbursable as a result of the legislation. Finally, H.R. 3113 as referred to the Committee amended the Act of August 26, 1937, to authorize and direct the Secretary of the Interior to execute and implement the "Agreement Between the United States of America and the Department of Water Resources of the State of California for Coordinated Operation of the Central Valley Project and the State Water Project" subject to certain conditions.

In regard to the Coordinated Operation Agreement, the Committee amendment substitutes the text of S. 1192 for the language of the House passed bill. This, in effect, provides a straightforward authorization for the Secretary of the Interior to execute and implement the COA. The Committee noted in its deliberations on H.R. 3113, that as passed by the House, the bill would elevate the status of several provisions of the COA from that of elements of an agreement to the authority of statute. Concern was expressed that by doing so, the delicate balance achieved by competing interests during the negotiations leading up to the COA may be upset. Serious concern was also expressed as to whether or not investing the Secretary with the authority to enter into a cooperative agreement, while at the same time elevating some of the provisions of the agreement into statute, may imply that the Secretary has the authority to make allocations of water which would circumvent the prescribed statutory terms of the original project authorization act.

Finally, the Administration noted in its comment on H.R. 3113 that: "While we can support H.R. 3113 to the extent that it authorizes and directs the Secretary to execute and implement the May 1985 COA, we have major reservations and concerns with the remainder of the bill." The full text of the Administration's comments on H.R. 3113 is included in the Executive Communications section of this report. The Committee shares some of the Administration's concerns.

The Committee amendment in the nature of a substitute includes several provisions which, while not directly related to the COA, are nevertheless believed by the Committee to be relevant to the Central Valley Project or to western water resources. The amendment includes authorization for the Suisun Marsh restoration program thereby addressing further the demands that may be made on the operation and management of the Central Valley Project; such action is complimentary to the authorization of the COA and furthers the effort to deal with the water resources of the area in a more coordinated and comprehensive manner. Problems associated with the water quality of the Suisun Marsh were not addressed in the House passed bill. The Committee amendment also substantively amends the Small Reclamation Projects Act of 1956, as amended, and amends the Federal Power Act; neither of which were included in the House passed bill.

Identified by section, the additional provisions would provide as follows:

SEC. 102. This section provides that the Secretary of the Interior shall not contract for the delivery of more than 75 percent of the firm annual yield of the Central Valley Project not currently committed under long term contracts until 1 year after the Secretary has transmitted to the Congress a feasibility report, together with his recommendations, on the "Refuge Water Supply Investigation," Central Valley Basin, California. This section was added to address the concerns expressed by fish and wildlife interests that, with authorization and implementation of the COA, all available water supplies may become subject to long-term contracts without consideration of refuge needs. The Committee notes that the effect of the amendment is not to reserve water for refuge needs in the sense that it creates a legal reservation.

SEC. 103. This section provides that new or amended contracts for delivery of water from the Central Valley Project shall include provisions allowing for adjustment of rates and the redetermination of ability to pay. The effect of this section is to codify current practice by the Bureau of Reclamation.

SEC. 104. This section provides that new or amended contracts for the delivery of water from the Central Valley Project include provisions ensuring that operation and maintenance cost deficits of the Central Valley Project be repaid with interest. The effect of this section is to codify current practice by the Bureau of Reclamation except for the imposition of interest charges on operation and maintenance deficits originating as a result of project irrigation functions. In addition, the section provides that interest would be charged at a rate equal to the average market yields on outstanding marketable obligations of the United States with remaining pe-

riods to maturity comparable to the applicable reimbursement period of the project.

SEC. 201. This section authorizes the Secretary of the Interior to execute and implement the Suisun Marsh Preservation Agreement.

SEC. 202. This section prescribes the sharing of costs between the Bureau of Reclamation and the California Department of Water Resources for the implementation of the agreement. The Federal share is not to exceed 40 percent of the construction costs or $50 million (indexed for cost increases or decreases) whichever is less, and not to exceed 40 percent of the related operation and maintenance costs. All Federal costs are to be considered costs of the Central Valley Project and are to be allocated to the reimbursable and nonreimbursable purposes served by the project.

SEC. 203. This section provides that costs incurred before and after the date of execution of the agreement are to be included in the total for determining the Federal share of construction, operation, and maintenance costs.

SEC. 204. This section authorizes the appropriation of $50 million (subject to indexing) for the implementation of the agreement and also such sums as may be required for operation and maintenance.

SEC. 301. This section specifies that the amendments made by title III of H.R. 3113 apply to the Small Reclamation Projects Act of 1956, as amended (hereinafter referred to as the "Act" in the context of amendments made to the Small Reclamation Projects Act by H.R. 3113 as ordered reported).

SEC. 302. This section amends section 1 of the Act so as to emphasize the use of the program for the rehabilitation and betterment of existing projects for purposes of significant conservation of water, energy and the environment, and for purposes of water quality control.

SEC. 303. This section amends section 3 of the Act to increase the filing fee for project applications from $1,000 to $5,000 to reflect the inflation that has occurred since enactment of the original Act in 1956.

SEC. 304. This section amends section 4(b) of the Act to provide that Federal funds cannot be used as "matching funds" for purposes of meeting the cost-sharing requirements of the Act. This section also amends section 4(b) to provide for a 25 percent up-front financing requirement which may be reduced to as low as 10 percent if the Secretary of the Interior determines that an organization is unable to secure financing from other sources under reasonable terms and conditions. This section recognizes the need to secure increased levels of non-Federal financial participation in water resource related developments, but also recognizes that flexibility must be provided to the Secretary so that he may respond to the unique financial and economic circumstances surrounding individual project proposals and loan applications.

SEC. 305. This section amends section 4(c) of the Act to require the Secretary of the Interior to transmit to the Congress with each loan proposal a certification of successful irrigability of project lands and an investigation of the potential for toxic or hazardous irrigation return flows. This section reflects the Committee's concern that the viability of a project proposal be examined in the context of the available physical resource. In addition, the Committee,

keenly aware of the unfortunate circumstances surrounding toxic contamination at the Kesterson National Wildlife Refuge in California, believes that an analysis of the potential hazards posed by irrigation return flows should be integral to the preparation of any project proposal submitted pursuant to the Small Reclamation Projects Act.

SEC. 306. This section amends section 5(b) of the Act to insure that cost-sharing requirements for project costs allocated to flood control for projects funded by the Small Reclamation Projects Act shall be on the same basis as required for Corps of Engineers projects. The Congress is presently considering legislation (H.R. 6 and S. 1567) which addresses fundamental changes in the policies guiding water resource development activities by the Corps of Engineers. It is the intent of the Committee that the policies which govern flood control activities by the Corps of Engineers should equally apply to identical activities undertaken by the Bureau of Reclamation pursuant to the Small Reclamation Projects Act.

SEC. 307. This section amends section 5(c)(1) of the Act to shorten the repayment period on project loans from 50 to 40 years and amends section 5(c)(2) of the Act to require that market rates of interest apply to the interest bearing portions of loans made pursuant to the Act. These conditions reflect the fiscal realities confronting the Federal Government in continuing monetary support for basic infrastructure and water resource development needs.

SEC. 308. This section amends section 8 of the Act to require the Secretary of the Interior to transfer to the Fish and Wildlife Service or to the National Marine Fisheries Service such funds as may be necessary for investigations required pursuant to the Fish and Wildlife Coordination Act for purposes of the Small Reclamation Projects Act.

SEC. 309. This section amends section 10 of the Act to authorize the appropriation of an additional $600 million for projects under the Small Reclamation Projects Act. In addition, section 10 is amended to require that no more than 20 percent of the newly authorized $600 million may be spent for projects located in a single State. The Committee notes that the benefits of the Small Reclamation Projects Act have largely accrued to three States. By adopting the language limiting expenditures of no more than 20 percent of the newly authorized funds to any one State, the Committee intends that the benefits of the program will be distributed over a wider geographical area.

SEC. 310. This section seeks to apply the new requirements made by the amendments to the Small Reclamation Projects Act in as equitable a manner as possible given that many organizations have already expended considerable sums in preparing loan applications under the terms of the "old" Act. The Committee recognizes that the amendments made to the Small Reclamation Projects Act by H.R. 3113 as ordered reported are substantive and will impose additional financial requirements on applicants. The Committee, therefore, has been selective as to the application of the new requirements to final applications received by the Secretary prior to January 1, 1986, and draft applications received by the Secretary after February 1, 1986.

SEC. 401. This section amends the Federal Power Act to provide that no charge shall be assessed for the use of any Government dam or structure if the Secretary of the Interior has entered into a contract with such licensee which covers one or more projects for which a license was issued by the Federal Energy Regulatory Commission prior to January 1, 1985, and if the contract contains provisions specifically providing each of the following: A powerplant may be built by the licensee utilizing irrigation facilities constructed by the United States; the powerplant shall remain in the exclusive control, possession, and ownership of the licensee concerned; and all revenue from the powerplant and from the use, sale, or disposal of electric energy from the powerplant shall be, and remain, the property of such licensee. The section applies to any project covered by such a contract only during the term of such contract unless otherwise provided by subsequent Act of Congress. Similar language has previously been considered by the Committee in the context of S. 1132 in the 98th Congress and S. 953 in this Congress.

COST AND BUDGETARY CONSIDERATIONS

The following estimate of costs of H.R. 3113 as ordered reported by the Committee on Energy and Natural Resources has been provided by the Congressional Budget Office:

CONGRESSIONAL BUDGET OFFICE
U.S. CONGRESS
WASHINGTON, D.C. 20515

Rudolph G. Penner
Director

March 14, 1986

Honorable James A. McClure
Chairman
Committee on Energy and
Natural Resources
United States Senate
358 Dirksen Senate Office Building
Washington, D.C. 20510

Dear Mr. Chairman:

The Congressional Budget Office has prepared the attached cost estimate for H.R. 3113, a bill to implement the Coordinated Operations Agreement, the Suisun Marsh Cooperative Agreement, and to amend the Small Reclamation Projects Act of 1956, as amended, and for other purposes.

If you wish further details on this estimate, we will be pleased to provide them.

With best wishes,

Sincerely,

Rudolph G. Penner

cc: Honorable J. Bennett Johnston, Jr.
Ranking Minority Member

CONGRESSIONAL BUDGET OFFICE

COST ESTIMATE

March 14, 1986

1. BILL NUMBER: H.R. 3113

2. BILL TITLE:

A bill to implement the Coordinated Operations Agreement, the Suisun Marsh Cooperative Agreement, and to amend the Small Reclamation Projects Act of 1956, as amended, and for other purposes.

3. BILL STATUS:

As ordered reported by the Senate Committee on Energy and Natural Resources, March 6, 1986

4. BILL PURPOSE:

Title I of H.R. 3113 would authorize the Secretary of the Interior, acting through the Bureau of Reclamation (BOR), to execute and implement the agreement for the coordinated operation of the Central Valley Project (CVP) and the State Water Project in California, dated May 8, 1985. Provisions in Title I would also place certain temporary restrictions on the BOR's ability to contract for the delivery of water from the CVP and on the terms under which new or amended contracts could be made.

Title II of the bill would authorize the Secretary of the Interior, again acting through the BOR, to execute and implement the cooperative agreement between the federal government, the State of California, and the Suisun Resources Conservation District, dated November 1, 1985. Title II specifies that the costs of implementing the Suisun Marsh agreement would be shared by the BOR and the State of California, according to specified guidelines. Finally, Title II would authorize appropriations of up to $50 million plus an adjustment for inflation to cover the federal share of construction costs and such sums as may be necessary to cover the federal share of annual operation and maintenance costs.

Title III of H.R. 3113 would amend and reauthorize the Small Reclamation Projects Act of 1956, as amended. Specifically, Title III would increase the program's appropriation ceiling by $600 million effective in fiscal year 1987. These funds would be available to provide loans and grants for small nonfederal reclamation projects. Title III would also amend the act to increase the nonfederal participation and cost-sharing in small reclamation projects and to change the interest rate formula to reflect the actual cost of borrowing to the U.S. Treasury.

Title IV would exempt certain licensees from the annual charges levied by the Federal Energy Regulatory Commission (FERC) on hydroelectric projects using federal dams or other structures. This exemption would apply to three licensees that have a contractual right to the revenues from projects using federal irrigation facilities.

5. ESTIMATED COST TO THE FEDERAL GOVERNMENT:

(by fiscal years, in millions of dollars)

	1986	1987	1988	1989	1990	1991
Spending						
Estimated Authorization Level	4	10	8	17	32	43
Estimated Outlays	3	7	7	13	24	36
Loss of Receipts						
Estimated Budget Authority	2	4	2	---	---	---
Estimated Outlays	2	4	2	---	---	---
Total Budget Impact						
Estimated Authorization Level/ Budget Authority	6	14	10	17	32	43
Estimated Outlays	5	11	9	13	24	36

Additional costs totaling $42 million (plus adjustments for inflation) could also result from enactment of Title II beginning in fiscal year 1992, if the BOR must construct additional facilities to comply with the terms of the agreement with the Suisun Resources Conservation District and the State of California.

The costs of this bill fall within budget functions 270 and 300.

Basis of Estimate:

Title I. Title I would prohibit the BOR from contracting for the delivery of more than 75 percent of the firm annual yield of the CVP that is not currently committed under long-term contracts until one year after it completes a feasibility report on supplying water for the preservation of wildlife. Based on information from the BOR, it is expected that this provision would prevent the BOR from selling approximately 250,000 acre feet of water per year for two years. Assuming enactment of this bill by May 1, 1986, it is estimated that this provision would result in a loss of receipts from the sale of water totaling approximately $8 million over the fiscal years 1986 through 1988.

Title II. Title II would authorize funds for the construction, operation and maintenance of the Suisun Marsh project in cooperation with the State of California. The bill stipulates that federal payments shall not exceed 40 percent of the total actual construction costs or $50 million adjusted for inflation, whichever is less, and 40 percent of the actual annual operation and maintenance costs of the project.

For the purposes of this estimate, it was assumed that all sums authorized would be appropriated, beginning with a supplemental late in fiscal year 1986. It was further assumed that the first phase of the construction projects planned by the BOR would begin late in fiscal year 1986 and would cost about $32 million over a three-year period. The construction of the second phase would begin in fiscal year 1992 only if the first phase is not sufficient to comply with the terms of the agreement. Outlays have been estimated based on information from the BOR.

Title III. Title III would authorize the Bureau of Reclamation to continue making loans and grants to nonfederal public entities for the purposes of constructing or rehabilitating water resources projects. Because the BOR has approximately $200 million left in its current authorization ceiling, it is estimated that it will not need appropriations from the new $600 million ceiling until 1988. It was also assumed that the $600 million authorized by the bill would be appropriated so as to maintain current program levels. Estimated outlays are based on historical disbursement patterns for this program.

This program receives an annual appropriation, and repayments go directly to the Treasury. Most loans have repayment periods of 30-35 years. Projects take from three to five years to complete and repayments begin in the calendar year after construction is completed. Therefore, payments of principal and interest are not expected to begin until 1990. Repayments are estimated to be approximately $0.2 million in 1991 and to grow steadily for approximately the next 30 years. There have been no defaults in this program, and thus none have been assumed in this estimate.

Title IV. The cost of Title IV would depend on the results of judicial action on the appeals by the three licensees for an exemption from the annual charges. Under current policy, FERC would bill the producing licensees in 1986, with the payment due in fiscal year 1986. Thus, if the courts were to uphold FERC's authority to charge the fee under current law, Title IV would result in lost fee income averaging about $260,000 per year that would be due during the 1986-1991 period. Assuming that the licensees would otherwise pay the fee when due, this loss of income would begin in 1986, and would continue over the life of the projects, typically about 50 years. If, on the other hand, the courts would deny FERC's authority to collect such fees, the bill would have no net impact on the federal budget.

6. ESTIMATED COST TO STATE AND LOCAL GOVERNMENTS:

Title III of this bill contains provisions that would increase nonfederal participation and cost-sharing in small reclamation projects. It would establish a 25 percent nonfederal cost-sharing requirement for small reclamation projects. The Secretary of the Interior would have the discretion to reduce the nonfederal share of project costs to 10 percent based on an applicant's ability to pay. The bill would also increase the application fee from $1,000 to $5,000, and would require interest to be charged at market rates for non-irrigation loans. (Approximately 75 percent of the loans made under this program are for irrigation purposes and are interest-free.)

These provisions are expected to affect the ability of nonfederal entities to undertake small reclamation projects. Based on the program levels assumed in this estimate, nonfederal interests choosing to participate in this program would incur additional costs totaling up to $25 million over the 1987-1991 period as a result of the cost-sharing provisions.

7. ESTIMATE COMPARISON: None.

8. PREVIOUS CBO ESTIMATE:

On August 19, 1985, the Congressional Budget Office prepared a cost estimate for H.R. 3113, as ordered reported by the House Committee on Interior and Insular Affairs, July 31, 1985. Provisions of Title I are similar but not identical to the House-reported version of H.R. 3113.

On June 13, 1985 and on February 28, 1986, CBO transmitted cost estimates of S. 953, a bill to validate contractual relationships between the United States and various nonfederal entities, as ordered reported by the Senate Committee on Energy and Natural Resources on June 12, 1985 and by the House Committee on Energy and Commerce on February 6, 1986, respectively. The estimated cost of Title IV of H.R. 3113 is identical to the estimate of the House version, and similar but not identical to the estimate of the Senate bill.

9. ESTIMATE PREPARED BY: Theresa Gullo and Kathy Gramp (226-2860)

10. ESTIMATE APPROVED BY:

James L. Blum
Assistant Director
for Budget Analysis

Regulatory Impact Evaluation

In compliance with paragraph 11(b) of rule XXVI of the Standing Rules of the Senate, the Committee makes the following evaluation of the regulatory impact which would be incurred in carrying out H.R. 3113 as ordered reported by the Committee.

As ordered reported, H.R. 3113 is not a regulatory measure in the sense of imposing Government-established standards on private individuals and businesses. However, enactment of H.R. 3113 will impose significant economic burdens on certain individuals and organizations.

Title I of H.R. 3113 would in effect ensure that Federal costs associated with implementation of the Coordinated Operation Agreement for the Central Valley Project and the State Water Project in California are to be treated as project costs and allocated amongst project purposes of the Central Valley Project and reimbursed in accordance with the Reclamation law.

Title II would authorize the Suisun Marsh Preservation Agreement with related Federal costs subject to the same repayment conditions as the costs of title I.

Title III amends the Small Reclamation Projects Act of 1956 so as to impose mandatory cost sharing requirements for participation in the program as well as increasing the interest rate applicable to interest bearing components of the loan.

No additional personal information would be collected as the result of enactment of H.R. 3113 as amended. Therefore, there would be no impact on personal privacy.

Little, is any, additional paperwork would result from the enactment of H.R. 3113.

Executive Communications

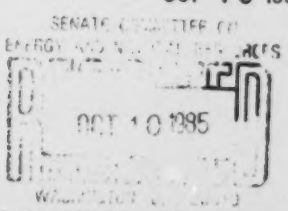
The pertinent legislative reports and communications received by the Committee from the Department of the Interior and the Office of Management and Budget setting forth Executive agency recommendations relating to H.R. 3113 and S. 953 are set forth below. The Committee requested legislative reports from the Department of the Interior and the Office of Management and Budget on S. 1171 and S. 1192 on June 19, 1985. The legislative reports have not yet been received; however, set forth below are the statements submitted by the Department of the Interior during hearings before the Subcommittee on Water and Power on S. 1171 and S. 1191 (S. Hrg. 99-258).

United States Department of the Interior

OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

OCT 10 1985

Honorable James A. McClure
Chairman, Committee on Energy and
Natural Resources
United States Senate
Washington, D.C. 20510



Dear Mr. Chairman:

This is to provide you with our views on H.R. 3113, a bill "Providing for the coordinated operation of the Central Valley project and the State water project in California."

The Department of the Interior supports this bill as it was passed by the House provided that it is amended to (a) maintain the obligation of water users under current reclamation law to provide reimbursement to the Federal Government for the cost of salinity mitigation and water quality enhancement; and (b) include the Suisun Marsh mitigation agreement which provides substantial cost-sharing with the State of California. Without these amendments, we can support at this time only those provisions of H.R. 3113 which would authorize the Secretary of the Interior (Secretary) to execute and implement the May 1985 Coordinated Operation Agreement (COA).

The Administration has consistently pursued, as a policy objective, the establishment of increased non-Federal cost sharing and establishment and enforcement of appropriate user charges for water project benefits. We cannot accept a practice of exempting project beneficiaries from payment of those charges previously agreed to or required by law as a condition of construction of existing projects.

We have enclosed two draft amendments, which if enacted, would permit the Department to support H.R. 3113. The first, designated as "Enclosure A," would restore existing law by mandating reimbursement for Federal contributions in meeting State water quality standards. The second, designated as "Enclosure B," would authorize the Secretary to execute and implement the Suisun Marsh mitigation agreement.

As passed by the House, H.R. 3113 is a considerable departure from S. 1192, a bill "To implement the Coordinated Operation Agreement." S. 1192 would authorize the Secretary to execute and implement the May 1985 agreement between the United States and the State of California for coordinated operation of the Federal Central Valley Project (CVP) and the State Water Project (SWP). The COA is designed to ensure that specific water quality standards for the Sacramento-San Joaquin Delta are achieved while also meeting the operational goals and objectives for both projects.

The COA is the result of a long series of difficult and lengthy negotiations involving Federal, State and local representatives. It contains a complex and delicate balance of incentives and disincentives for both the Federal Government

and the State of California to inhibit either party from taking an action wholly unacceptable to the other. As passed by the House, H.R. 3113 would change this balance, primarily to the net disadvantage of the Federal Government, in several significant and substantive respects.

Major CVP facilities serve to regulate, store, or divert flows of the Trinity, Sacramento, American, Stanislaus, and San Joaquin Rivers, all of which are tributary (by way of a diversion tunnel, in the case of the Trinity) to the Sacramento-San Joaquin Delta. CVP water is pumped from the Delta and exported to the San Joaquin Valley via the Delta-Mendota and San Luis Canals and to Contra Costa County via the Contra Costa Canal. CVP water is also diverted and delivered upstream from the Delta with facilities that include the Tehama-Colusa, Corning, Folsom-South, Madera, and Friant-Kern Canals. The first CVP facility, the Contra Costa Canal, became operational in 1940, and many key facilities, such as Shasta Dam and the Delta-Mendota Canal, were operational by the early 1950's.

The California Water Resources Development Bond Act of 1960 authorized construction of the SWP. Initial water deliveries through its major conveyance facility took place in 1968. Major SWP facilities were constructed in the 1960's and early 1970's and are designed to regulate, store, and divert flows of the Feather River, a major tributary to the Sacramento River, and to export water from the Delta. The SWP delivers water pumped from the Delta to the southern San Joaquin Valley and southern California via the California Aqueduct and to parts of the San Francisco Bay area via the South Bay Aqueduct.

The water development history in the Sacramento-San Joaquin Delta involves many complex and difficult issues. The water demands in the Sacramento-San Joaquin Basins exceed available water supplies and have never been fully adjudicated. Many water right permits were secured by the various parties prior to the establishment of the State Water Resources Control Board (SWRCB). However, all of the water rights for the SWP and most of the water rights for the CVP are now regulated by the SWRCB in accordance with State law.

Major CVP and SWP differences include the ratio of urban to agricultural water users served by each project and the yields and storage capacities of the projects. Of the water now being delivered by the CVP, 95 percent goes to agricultural users. SWP water is delivered about equally to agricultural and urban users. The CVP's yield (estimated water supply available to the project) is approximately 9.4 million acre-feet per year. By contrast, the SWP yield is approximately 3.1 million acre-feet per year. The difference in yields derives partly from a difference in upstream storage capacities: the CVP's storage capacity in Clair Engle, Shasta, and Folsom Reservoirs totals about 8 million acre-feet, while the capacity of the SWP's single significant upstream storage facility at Oroville is an estimated 3.5 million acre-feet. Due to its lesser upstream storage, the SWP relies more than the CVP on exporting surplus flows available in the Delta during winter and spring.

In 1978, the SWRCB established water quality standards for the Sacramento-San Joaquin Delta that had the possible impact of reducing marketable yield from the CVP by as much as 800,000 to 1 million acre-feet per year. Because of the State board's ruling (Decision-1485), former Secretary Andrus placed a moratorium on further CVP water contracting until such time as the issue of application of those

water quality standards to the CVP was resolved. In conjunction with this moratorium, the Bureau of Reclamation (Bureau) has voluntarily operated the CVP since 1979 to meet Decision-1485 standards to the extent possible pending the negotiation of a new COA.

The issue of water quality standards for the CVP is being litigated by various parties. In dispute is whether water quality is an authorized purpose of the CVP and whether CVP water rights are senior to SWP water rights thereby requiring that the SWP be operated to satisfy the water quality standards before CVP water is committed to that purpose.

Under the new May 1985 COA:

- Both the CVP and the SWP would be committed to meeting water quality and outflow standards for the Delta that are extracted from the standards contained in the SWRCB's Decision-1485.

- Mutually recognized annual water supplies of the two projects are established. In this regard, the COA recognizes the long-established principle of Western water law that "first in time equals first in right." Under this principle, CVP facilities built before the SWP are recognized as having the water supply yield they would have had if the later facilities had not been built. The CVP and SWP have equal claims to the remaining water.

- Guiding principles for cooperative utilization of the facilities of the two projects through water conveyance services (or wheeling) and sale of water are provided. Under the COA, wheeling through the other project's facilities would occur in such situations as: during times of planned or unplanned project maintenance; whenever the CVP curtails export pumping to the Delta during May and June to minimize the effects of such pumping on young striped bass; and at times when the SWP has excess capacity available and the CVP needs to wheel water for other purposes.

Implementation of the COA would free a substantial block of CVP water for which the status is currently uncertain for future water service contracts. There have been numerous requests for additional water from current CVP contractors. Although delivery of additional supplies would in some cases be contingent on the construction of new conveyance facilities, in other cases, the new supplies could be used almost immediately.

While we can support H.R. 3113 to the extent it authorizes and directs the Secretary to execute and implement the May 1985 COA, we have major reservations and concerns with the remainder of the bill.

We are concerned that all costs for salinity control as well as all costs of meeting water quality standards over and above the otherwise applicable "Tracy" water quality standards are to be considered non-reimbursable under H.R. 3113.

This nonreimbursable allocation includes all CVP costs allocated to meeting all water quality standards which the Board may set in the future, including those for Contra Costa Canal. The Bureau currently considers water required to meet Decision-1485 standards largely a mitigation cost to be returned through CVP water rates. Water quality enhancement for Contra Costa Canal has historically been viewed as reimbursable pursuant to a contract between the Bureau and the Contra Costa Water District (CCWD). Currently, CCWD has been allocated over $29 million in general CVP costs. Under H.R. 3113 a portion of these costs would be nonreimbursable.

It should be remembered that the COA does not address State water quality standards for San Francisco Bay. They could not be included since no such standards exist, and it remains uncertain whether such standards will be a component of the new Delta standards. H.R. 3113 makes these previously separate considerations part of the present CVP commitment to water quality. As such, it becomes essentially an open-ended nonreimbursable commitment.

Appropriate compromises related to the use of CVP water for water quality purposes are already included in the COA. We believe that any change from the COA involving the use of CVP waters for salinity mitigation and water quality enhancement must be subject to the general principle of reimbursement. In support of this position, we offer the enclosed draft amendment (Enclosure A).

As passed by the House, H.R. 3113 would authorize the Secretary to operate the CVP to meet all water quality standards for the Delta and Suisun Marsh currently included in Decision-1485, as well as such future standards for those areas and the San Francisco Bay which the SWRCB may promulgate. While the bill attempts to give the Secretary the power to not meet standards if he finds them "inconsistent" with congressional directives, the fact that the bill directs the Secretary to meet State water quality standards means that such standards would become a project purpose. Consequently, the Secretary's ability to find inconsistency would be sharply diminished.

There are also special provisions in H.R. 3113 for the Contra Costa Canal which direct the Secretary to operate the CVP to provide water to the canal intake of a quality equal to or better than the Decision-1485 criteria. The only exception to this mandate would be pursuant to a drought emergency declaration by the Governor of California. In essence, Decision-1485 water quality becomes a floor for Contra Costa Canal water users.

Moreover, Contra Costa Canal standards are set forth as a "further" congressional directive to the Secretary. The otherwise applicable consistency determination under the bill which permits a change in CVP operations from State standards where such standards are "inconsistent" with congressional directives does not apply. Thus, the commitment to meet or exceed Decision-1485 standards for CVP waters at the intake of the Contra Costa Canal is absolute. The CCWD is thereby provided with a guarantee of water quality beyond that provided any other CVP user at zero cost.

In addition, we are concerned about those provisions of H.R. 3113 which would commit the CVP to meeting not only Sacramento-San Joaquin Delta water quality standards, but also any future water quality standards for San Francisco Bay.

The May 1985 COA currently excludes the permanent Suisun Marsh water quality standards formulated under Decision-1485. If these water quality standards are to be achieved without the construction of facilities in the Marsh, nearly 2 million acre-feet of water (1.2 million acre-feet from the CVP) would have to be released in dry years. Taking this action would reduce the additional CVP yield of up to 1 million acre-feet per year made available by the COA by at least 750,000 acre-feet.

The reason that Suisun Marsh standards were not included in the COA is the parties intended to address such standards under a subsequent contract and statute authorizing the construction of facilities to meet marsh requirements. Negotiations have now been completed on a cooperative Suisun Marsh agreement between this Department, the State of California and the Suisun Resources Conservation District. By authorizing the Secretary to execute and implement this agreement, the financing of construction, operation, and maintenance of additional facilities will be on a shared basis (60 percent State/40 percent Federal). Through the Suisun Marsh agreement, established Suisun Marsh standards could be met with an estimated 40,000 acre-feet in additional water from the CVP. Approximately $125 million is estimated as the cost for these Suisun Marsh facilities (Federal share: $50 million).

In order to implement the requirements of H.R. 3113 to meet all water quality standards in Decision-1485 without upsetting the delicate balance of interests included in the COA, we recommend the amendment of the bill to authorize the Secretary to execute and carry out the Suisun Marsh mitigation agreement. That agreement between the Department of the Interior, the State of California, and the Suisun Resources Conservation District provides for appropriate cost sharing by the State and Federal Governments. The enclosed amendment (Enclosure B) is designed to accomplish our second objective.

We are concerned with several other provisions in H.R. 3113 as passed by the House. For example, it would prevent any wheeling/purchase contract between the Bureau and the California Department of Water Resources from becoming effective without congressional authorization and approval. Such contracts are currently authorized by the COA without such authorization and approval.

Also, the requirement in section 1 of the bill to operate the CVP "in conjunction with" the SWP is unclear. It is important to remember that the COA was and is intended as a compromise; i.e., the Bureau would agree to meet water quality standards in Exhibit A, pursuant to the Article 6 sharing formula, in exchange for coordinated operation with the SWP which would recognize the CVP's prior water rights, thereby firming up the yield of the CVP. Our concern with the "in conjunction with" language would arise if the COA is terminated and the State refuses to adhere to the sharing formula of Article 6. The CVP would still be committed to meeting water quality standards, but it would no longer have the quid pro quo of the Article 6 methodology and its recognition of the CVP's prior water rights. While the House report on H.R. 3113 recognizes this issue and directs the CVP to operate in accordance with Article 6 methodology, H.R. 3113 is silent.

Finally, the Administration believes that any new construction that may be required to meet water quality standards should be specifically authorized by Congress on a project-by-project basis. To remove any ambiguity that might arise on this matter, a clarifying amendment of H.R. 3113 may be appropriate.

The Office of Management and Budget has advised that it has no objection to the presentation of this report from the standpoint of the Administration's program.

Sincerely,

Robert N. Broadbent

ASSISTANT SECRETARY

Enclosures

Enclosure A

DEPARTMENT OF THE INTERIOR PROPOSED AMENDMENT TO H.R. 3113

Page 2, line 25, strike the word "existing".

Page 3, strike lines 1 and 2 and insert in lieu thereof ", Exhibit A of the 'Agreement Between the United States of America and the Department of Water Resources of the State of California for Coordinated Operation of the Central Valley Project and the State Water Project' dated May 20, 1985, shall be reimbursable and the Secretary may provide such incremental increases in water only if agreements to repay such costs have been entered into by either the State of California or other beneficiaries."

Enclosure B

DEPARTMENT OF THE INTERIOR PROPOSED AMENDMENT TO H.R. 3113

Page 4, immediately after line 17, insert the following:

SEC. 4. SUISUN MARSH COOPERATIVE AGREEMENT

(a) The Secretary of the Interior is authorized to execute and implement the cooperative agreement between the Department of the Interior, the State of California and the Suisun Resources Conservation District printed in Senate Document _____.

(b) The costs of implementing the agreement provided for in subsection (a) of this section shall be shared by the Bureau of Reclamation and the California Department of Water Resources in strict accordance with article 12 of that agreement, provided that —

(1) payments made by the Secretary of the Interior shall not exceed 40 percent of the construction costs incurred under articles 6, 7 and 8 of the cooperative agreement, or $50 million, whichever is less, plus or minus such amounts as are justified by reason of ordinary fluctuations in construction costs as indicated by engineering cost indexes applicable to the types of construction involved therein;

(2) the Federal share of continuing annual operation and maintenance costs, including monitoring, shall not exceed 40 percent of the actual operation and maintenance costs; and

(3) the costs incurred by the United States for construction and for annual operation and maintenance in connection with the implementation of said agreement shall constitute an integral part of the cost of the Central Valley Project. The Secretary shall allocate such costs to the reimbursable and nonreimbursable purposes served by the project.

(c) Costs incurred both before and after the date of execution of the cooperative agreement herein authorized are to be included in the total for determining the Federal share of construction, operation, and maintenance costs.

(d) There are authorized to be appropriated for the implementation of the agreement referred to in subsection (a) of this section such sums as may be necessary to carry out this Act. No Federal funds may be expended under this Act in advance of appropriations therefor. Appropriations made under this Act shall remain available until expended without any fiscal year limitation.

United States Department of the Interior

OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

SEP 9 1985

Honorable James A. McClure
Chairman, Committee on Energy and
Natural Resources
United States Senate
Washington, D.C. 20510

Dear Mr. Chairman:

This responds to your request for our views on S. 953, a bill "To validate contractual relationships between the United States and various non-Federal entities."

We oppose enactment of S. 953.

We understand that S. 953 is designed to address certain repayment contracts between the United States and three Columbia River Basin Project irrigation districts. It is Administration policy that charges for use of Federal dams and facilities related to hydropower production by non-Federal powerplants (falling water charges) are to be assessed, collected and administered by the Federal Energy Regulatory Commission (FERC). While the final decision as to any specific exemption from such charges is up to FERC, we do not believe an exemption is warranted in this case.

On May 24, 1984, FERC adopted a final rule (49 Federal Register 22770, June 1, 1984) involving annual charges to licensees for hydroelectric power projects that involve use of government dams and other structures under Part I of the Federal Power Act (FPA) (41 Stat. 1063; 16 U.S.C. 792 et seq.). The final rule provides for a charge schedule based on the amount of energy a project produces. Rates are assessed against projects on a graduated basis, in proportion to the energy, and thus the benefits received from a government dam.

Annual charges for the use of these facilities are clearly required under current Federal law. Under section 10(e) of the FPA (16 U.S.C. 803(e)), when FERC licenses a project that will use a government dam or other structure, it is to set "reasonable annual charges" to "recompens(e)" the government for the use of its property. Several other principles affect FERC's determination of annual charges, including the direction under section 10(e) of the FPA "to avoid increasing the price to the consumers of power by such charges"; the policy of the FPA and the Energy Security Act of 1980 (Public Law 96-294; 94 Stat. 611) to encourage hydro development; the policy of the Public Utility Regulatory Policies Act (Public Law 95-617; 92 Stat. 3117) to encourage small hydro projects; and the general principle of administrative efficiency.

The three basic rate levels detailed in the May 1984 FERC rulemaking constitute a compromise between the statutory goals of minimizing costs to consumers and encouraging hydro development while obtaining reasonable compensation for the Federal Government. The major advantage of the graduated flat rate approach is that it is relatively simple and straightforward both for FERC to administer as well as for potential developers to factor into their project feasibility studies. These characteristics will enhance the likelihood of further non-Federal hydro project development at Federal dams and related facilities.

With respect to the application of FERC falling water charges, S. 953 would provide that ". . . no charge shall be assessed in those cases where the United States has heretofore entered into a contract with a licensee which provides that the licensee may build and own powerplants utilizing irrigation facilities constructed by the United States and which further provides that all revenues from such powerplants and from the use, sale or the disposal of power therefrom shall be and remain the property of the licensee." Similar language is also contained in article 55(b) of the contracts between the United States and the three Columbia Basin Project Irrigation Districts executed in 1968.

Article 55(b) states:

> With the prior approval of the Secretary, the District either alone or in conjunction with other districts, may build plants for the production of power and energy and structures and facilities necessary for the operation of such plants and all such plants shall be and remain in the exclusive control, possession, and ownership of the District or districts.
>
> All revenue from such powerplants and from the use, sale or the disposal of power (and) energy therefrom shall be and remain the property of the District or districts.

Under these contracts, as under Federal Reclamation law in general, any powerplants constructed by the United States would be designated as "project powerplants", and revenues would, in accordance with such law, be credited against the outstanding construction obligation for the project.

Article 55(b) was added to assure the districts their right to pursue non-Federal development of appropriate project hydroelectric sites and retain the benefits therefrom. The language was included with the assent of Federal negotiators after concerns were allayed about whether adequate power for irrigation pumping would be available to meet future needs. Accordingly, the contract language was inserted to facilitate non-Federal development for non-project use. Article 55(b) does not, however, diminish the government's right to impose an annual charge pursuant to section 10 of the Federal Power Act (16 U.S.C. 803) and section 9(c) of the Reclamation Project Act of 1939 (53 Stat. 1193; 43 U.S.C. 485h(c)). That charge is a use charge, or rental fee, for using facilities built at taxpayers' expense which are being repaid in part by the irrigators. As such a fee, or cost of doing business, the annual charge would be in the same category as wages and debt service, which remain as expenses payable by the owner of the hydroelectric facility.

In approving the construction of the powerplants, the Bureau of Reclamation notified each district by letter dated October 24, 1978, that a FERC license was necessary and that ". . . an annual payment will be required from the district for the use of government facilities, pursuant to section 10 of the Federal Power Act."

Under these circumstances, we do not support the exemption from annual falling water charges proposed by S. 953. The FERC rule appears to be a reasonable compromise between the requirement that the government be adequately compensated for the use of its property and the public policy that small hydropower developments be encouraged.

The Office of Management and Budget has advised that there is no objection to the presentation of this report from the standpoint of the Administration's program.

Sincerely,

R. N. Broadbent

Robert N. Broadbent

ASSISTANT SECRETARY

Statement of Robert N. Broadbent
Assistant Secretary - Water and Science
Department of the Interior

Witness before the Senate Subcommittee on Water and Power
of the Committee on Energy and Natural Resources
on S. 1171
to amend the Small Reclamation Projects Act of 1956.

July 16, 1985

Mr. Chairman, members of the Subcommittee, on behalf of the Department of the Interior, I am pleased to appear here today to comment on S. 1171 which would amend the Small Reclamation Projects Act to increase the appropriation ceiling by $600 million.

With one amendment to change the interest rate formula in the 1956 act and encouragement of you to consider a surplus crop amendment, we recommend enactment of S. 1171 and its companion bill in the House, H.R. 2025. An increase in the authorized ceiling will allow us to operate the program for a number of years, without any other additional authorizations.

The authorization of an increased ceiling is vital to continue the orderly planning and loan approval process of these small but important projects. The applicants, who are responsible for project planning and preparation of the the loan applications need some assurance that construction funds

S.Rept. 99-265 O - 86 - 2

will be available if they are to commit time and money in this endeavor. The current authorization ceiling is only adequate to complete loans already approved. Therefore, we will not be able to fund any additional loans without an increase in the ceiling.

It should be emphasized that the cost ceiling only sets the limit on the total accumulative Federal appropriation that can be made over a number of years. It would in no way obligate the Congress to an annual Federal appropriation of that magnitude. In fact, the current $600 million (ceiling) will be appropriated over a period of 33 years (see chart,1959-1992), which is an average of only about $18 million annually. The level of annual appropriation made each year is influenced by several factors, namely the number of approved loans (projects) per year and the length of the construction period for individual projects. Over the first 30 years of the program we have averaged 5 new starts with an average construction period of 3 years. Still another significant factor in keeping the Federal loan appropriations down, is the increasing level of local contribution (cost sharing) required of the program. Therefore, we anticipate that the additional $600 million ceiling would extend the program for another 20-25 years (see chart, 1985-2010).

In addition to the 32 approved projects that are either in preconstruction or construction and will require the remainder of the current $600 million ceiling to complete, there are many other loan application reports still in the process of being developed. In fact, 11 applications are complete and under review in the Bureau of Reclamation. Another 36 projects are in various stages of planning and report preparation. The estimated value of these projects is about $500 million. In addition, there are many more projects being considered by the public and community management entities that provide water to much of the 80 percent of irrigated land that does not now benefit from Bureau assistance.

We are committed to the adoption of modern conservation features through this program. Water quality impacts of irrigation, achieving greater efficiency in water and energy use, conjunctive management of ground and surface water, water reuse including the use of sewage effluent as well as other aspects of modern water resource management require careful planning and negotiations. The zero interest rate feature of the irrigation portion of the loan makes many of these measures possible. However, if we do not receive an increase in the ceiling we maintain that this broad gauge approach to planning by the local sponsors will be discouraged. They will turn instead to quicker, simpler

fixes for immediate problems and many opportunities will be lost.

The loan program serves an important need and is unique from a cost-sharing standpoint. The loan funds are repaid by the applicant who also provides significant front-end financing. Over the past 3 years local funds have averaged 22 percent of the total cost. This private funding level is the result of the Department's policy of keeping Federal subsidies (loan factors) at 50 percent or less. Currently, water users have two methods of achieving a lower loan factor. One is by providing up-front financing and the other is by repaying the Federal loan in a shorter period of time. Two recently approved loans illustrate this situation. The Ak-Chin Indian Tribe could finance only 7 percent of their project's costs but were able to repay the Federal loan in 17 years. This resulted in a loan factor of 50 percent. The East Bench Irrigation District plans to finance 36 percent of their project's cost but must have 37 years to repay the Federal loan. Their loan factor is 49 percent.

In an encouraging trend, many more States are considering steps to enhance local financial capacity and to participate directly in such projects. This is in recognition of the considerable benefits to the people of the State from these

projects, from both the economic stimulus of the irrigated farming and the environmental and conservation values encouraged by the program. However, not all States are able or willing to participate at the same levels. As I have already mentioned, under present policies we have some flexibility within the loan subsidy rule to deal with these differences. Any changes should take into account these State-to-State differences.

Some local sponsors are not in a financial position to provide increased cost sharing or to finance an up-front contribution. We are currently exploring procedures for identifying such hardship situations so that a consistent and responsible approach can be taken. Recent experiences with Indian projects are examples.

The Small Reclamation Projects program has been successful in achieving a number of desirable innovations in water management. Most projects achieve substantial conservation gains over the facilities they replace. Indeed a significant part of the repayment capacity for the irrigation portion is often from water, energy, and other O&M savings. Transfer of water to urban users has been facilitated. Ground water recharge and protection has been a feature of other projects. Innovative and cost-saving technology has been encouraged

with some impressive results. The use of roller compacted concrete is a recent dramatic example at the Galesville Project in Douglas County, Oregon. Just as significant is the very frequent cooperation between local entities that the program makes possible. Many projects can be cited where several canal companies have joined together and with neighboring cities in the joint management of their resources. Such comprehensive management approaches have increased self-sufficiency and ability of local people to be independent and productive. Many projects can be cited as examples of the above.

Under the Small Reclamation Projects Act, interest-free loans are intended to assist commercial agricultural production on lands determined to be irrigable and within landholding limitations (nonexcess). Interest is charged annually on those portions of loans associated with the furnishing of irrigation benefits to excess lands; M&I water service; production of commercial hydroelectric power; and the reimbursable portions of fish and wildlife enhancement and public recreation. In addition, the cost of water sevice to nonirrigable lands and small tracts or lands not used for the commericial production of agricultural crops or livestock must be allocated to M&I water supply and be repaid with interest.

Under the current law the interest rate is determined each fiscal year by the Secretary of Treasury in accordance with a formula contained in the Small Reclamation Projects Act and is based upon the computed average interest rate payable on outstanding long-term obligations of the United States. The rate applicable for fiscal year 1985 is 10-7/8 percent. We recommend that the Small Reclamation Projects Act be further amended to change the interest rate formula to reflect the average yield on the outstanding marketable securities of the United States. I am submitting the recommended language with my statment. This formula will reflect the actual cost of borrowing to the U. S. Treasury. During fiscal year 1984 this rate was about 12.38 percent. For comparison, the rate applicable for fiscal year 1985 under the current formula is 10-7/8 percent.

Finally, I would like to comment on the issue of surplus crops. We recommend that the irrigators be given a choice between two options: (1) they could contract to repay the cost associated with the production of surplus crops with interest and participate in farms programs, including the production of surplus crops to the extent the farm programs permitted, or (2) they could repay the loan at the interest-free level and refrain from participation in the farms programs and the production of surplus crops. We will be happy to work with the Committee in developing the

language needed to provide for such options.

In summmary, the original purpose of the Small Reclamation Projects program, as authorized by the Congress in 1956, was to enable private water user organizations in the 17 Reclamation States and Hawaii to obtain loans and/or grants for the construction of small projects. This is even more approriate today as we encourage greater non-Federal participation in the planning and construction of water projects. Loans approved under this program permit those private organizations to continue, or to expand their operations with projects they have planned entirely with their resources and only partially financed for construction with Federal funds.

This completes my prepared statement, Mr. Chairman. I would be happy to answer any questions.

Amendment to S. 1171
To modify the interest rate formula contained in
P. L. 84-984

Amend Section 5(c)(2) to read, "interest, as determined by the Secretary of Treasury, as of the beginning of the fiscal year in which the contract is executed, on the basis of the average market yields on outstanding marketable obligations of the United States with remaining periods to maturity comparable to the applicable reimbursement period of the project, adjusted to the nearest one-eighth of one per centum, on that portion of the loan which is attributable to furnishing irrigation benefits in each particular year to land held in private ownership by a qualified recipient, as such term is defined in section 202 of the Reclamation Reform Act of 1982, in excess of 960 irrigable acres, or by a limited recipient, as such term is defined in section 202 of the Reclamation Reform Act of 1982, in excess of 320 irrigable acres;".

United States Department of the Interior

BUREAU OF RECLAMATION
WASHINGTON, D.C. 20240

AUG 15 1985

IN REPLY
REFER TO: 705

Honorable Frank H. Murkowski
United States Senate
Washington, D.C. 20510

Dear Senator Murkowski:

We would like to provide the following to supplement the testimony of Mr. Robert N. Broadbent given before your subcommittee on July 16, 1985, on S. 1171 to amend the Small Reclamation Projects Act of 1956.

1. Loan processing costs have varied greatly depending upon the size and complexity of the project. Two recent loans illustrate this; the Bureau's processing cost for Douglas County, Oregon was $96,000 while that for Greater Wenatchee Irrigation District, Washington was only $15,000. It was never intended that the $1,000 filing fee required by Section 3 of the Act would fully cover the cost of the review. Section 3 reads as follows: "Each such proposal shall be accompanied by a payment of $1,000 to defray, in part, the cost of examining the proposal." It has always been understood that the total expense was much greater. However, it has been our policy to have the full cost of the Bureau's activities repaid by the applying organization as part of the loan, except those costs properly allocable to nonreimbursable functions. We do not recommend any change in these procedures or the legislation.

2. We feel that there may be a need to provide a means test that may include some applicants who may not financially qualify under the Small Loan Program but have worthwhile projects. In some cases the Federal Government is the only source of loan funds for a public entity to borrow for a water project. The requirements for full use of the farmers payment capacity to repay the Federal loan and the limit of the Federal subsidy (loan factor) at 50 percent disqualifies some entities. Districts of only moderately well financed farmers with no high value crops and no opportunity to share costs with municipal and industrial or hydropower users are at a significant disadvantage. They usually cannot qualify for a Small Reclamation Project loan or for a loan at any commercial establishment. Projects located near urban areas or in areas of long growing seasons can often grow high value specialty crops and are not as restricted by the current 50 percent subsidy criteria. Therefore, we feel it may be desirable to have a means test that could be used to determine cases where waiving the stringent fiscal requirements would be in the best interest of certain organizations, their communities, States, and the Federal Government.

3. The Department is committed to the adoption of modern conservation features through both the Small Reclamation Projects program and the regular Reclamation program. The existing legislation does not contain explicit language requiring us to seek water conservation programs in the loan application. However, all Reclamation repayment contracts contain a standard

water conservation program article which requires that a water conservation program be developed and implemented. The Small Reclamation Projects program has the potential to achieve greater returns through certain conservation measures that would not be undertaken without special incentives. By providing authority in the legislation for special grants, organizations could be induced to facilitate the achievement of certain conservation measures such as the consolidation of irrigation facilities, environmental protection, development of unique fish and wildlife habitat, and promotion of special skills and managerial development on Indian irrigation projects.

Sincerely yours,

Acting
Commissioner

Rev. 7/11/85

Statement of Robert N. Broadbent
Assistant Secretary for Water and Science
Witness for the Department of the Interior before the
Subcommittee on Water and Power of the
Senate Committee on Energy and Natural Resources
on S.1192
A Bill to Implement the Coordinated Operation Agreement
for the
California Water Project and Federal Central Valley Project
July 16, 1985

We appreciate the opportunity to be here today to present the views of the Department of the Interior regarding the Coordinated Operation Agreement. That Agreement provides an operating relationship between the two largest water projects in the State of California. Under the Agreement, the operation would be coordinated in such a way that water quality standards established by the State Water Resources Control Board in Decision 1485 for the Sacramento-San Joaquin Delta would be achieved while at the same time meeting the operational goals and objectives of both the Central Valley Project and the State Water Project. The proposed Agreement provides a basis for building consensus around water development issues in the State of California. The formulae established in the agreement provide for an equitable sharing of water resources and recognize water development strategies adopted by both the State and Federal projects.

The long history of water development in the Sacramento-San Joaquin Delta is surrounded by many complex and difficult issues. The water rights in the respective basins (Sacramento and San Joaquin) exceed available water supplies and have never been fully adjudicated. Many permits or rights were secured by the various parties in a period of time when there was no Water Resources Control Board in the State of California and, subsequently, additional water rights were issued by the State Water Rights Board. All of the water rights

for the State Water Project and most of the water rights for the Federal Central Valley Project are now regulated by the California Water Resources Control Board in accordance with State law.

The Coordinated Operation Agreement recognizes, through the methodologies and assumptions used in its development, the long-endorsed principle of Western water law or, "first in time—first in right." In the case of the Coordinated Operation Agreement, each project develops its water supply with a priority established by the date it was actually constructed. As a consequence, officials for the two projects have been able to agree to their respective water supplies without actually having to litigate the water rights issue.

The Coordinated Operation Agreement also provides for integration of the two projects operationally to maximize the resources of both projects for the mutual benefit of the State of California and the Nation.

The Coordinated Operation Agreement provides an institutional framework whereby both projects can operate conjunctively in such a way that the State, if it purchases water on an interim basis from the Federal Central Valley Project, can help repay the Federal investment in project works. At the same time, by utilizing surplus conveyance capacity in the State aqueduct, Federal contractors can similarly assist in repaying the capital costs of the California Aqueduct. Making better use of existing facilities is in both the State and the Nation's interest.

Attached to this statement is a summary which explains in further detail the Agreement and history of the State Water Project and Central Valley Project.

In summary, the Coordinated Operation Agreement does a number of things: It enables the projects to conserve water resources; it enables reduction of groundwater overdraft; it fosters protection of environmental values of the Delta, the Bay and the other waters of the State of Califronis. It has an additional advantage of providing more time for future planning to be certain that future water resource development in the State of California can be done in an economically efficient and environmentally sensitive way.

We believe the Coordinated Operation Agreement is a major step in securing water system dependability, environmental protection, and economic stability within the State of California and would encourage its ratification by the Congress.

We appreciate the opportunity to be here before you today and look forward to answering any questions you may have.

SUMMARY OF COORDINATED OPERATION AGREEMENT ARTICLES

Article 1, Preamble

Names the parties to the Agreement, the U.S. Bureau of Reclamation and the Department of Water Resources, and leaves blank a citation of an act of Congress that is proposed to be enacted authorizing the Bureau of Reclamation to sign the Agreement.

Article 2, Explanatory Recitals

Gives background information and establishes the positions of the parties as they enter the Agreement.

Article 3, Definitions

Defines terms used in Article 6, Coordination of Operations. The terms used to describe "balanced water conditions," "excess water conditions," "United States storage withdrawal" and "State storage withdrawal" are all discussed in Article 6. These definitions are complicated, but their underlying principle is simple: a storage withdrawal occurs when water is being drawn out of a reservoir or system of reservoirs at a higher rate than it is flowing in. An exception to this principle is made for water flowing into Whiskeytown Lake (CVP) through Judge Francis Carr Powerplant. This water is imported to the Sacramento Valley basin from the Trinity River via the Clear Creek Tunnel, and it is not counted as inflow to Whiskeytown Lake. In effect, all of the water imported to the Sacramento Valley basin is counted as storage withdrawal.

Article 4, Term of Agreement

Gives the Agreement an indefinite term; i.e., the Agreement remains in force until mutually terminated by the parties, or unilaterally terminated in the process provided by Articles 10 and 14.

Article 5, Facilities

Identifies the existing features of the Central Valley Project and State Water Project that are recognized in the Agreement. The addition of any facilities to the operation of either project will require amendment of the Agreement after a periodic review as described in Article 14.

Article 6, Coordination of Operations

This article is the heart of the Agreement and merits thorough explanation. It specifies how, and in what proportions, the two projects will:

- Share available water supplies;
- Share responsibilities to maintain Sacramento Valley inbasin use.

The sharing of water supplies and responsibilities is controlled by what was known during the negotiating process as "the sharing formula." This formula was arrived at through studies in which the two projects were operated (on paper) to produce the 1980-level project supplies detailed in Exhibit B-1.

The sharing formula is structured around the need to meet the inbasin use requirements. Inbasin uses are all uses of water of the Sacramento River system in the Sacramento Valley and the Delta, which includes the Delta outflow and water quality requirements specified by Exhibit A of the Agreement. The Exhibit A requirements, extracted from State Water Resources Control Board Decision 1485, vary according to year types classed as "wet, above normal, below normal, dry, and critical", and according to time of year within the year types.

The amount and timing of inbasin use requirements is not known to or controlled by the project operators and cannot be readily measured. However, the Delta is downstream from all other inbasin uses, and compliance with the Exhibit A

requirements or "standards" for the Delta can be monitored. If the Exhibit A standards are being met, all other inbasin use requirements are being met, because the Delta gets only the water that remains after upstream uses have been satisfied.

When water is plentiful in the Sacramento River system, the projects can store and export water to their full capabilities, and inbasin use requirements will still be met. But as runoff subsides, a time comes when water must be allocated among the two projects and inbasin uses. This time is signaled when conditions in the Delta approach the Exhibit A standards. When the Delta reaches Exhibit A conditions, known as "balanced water conditions," the Bureau and the Department operate their projects by the sharing formula to maintain those conditions. Balanced water conditions occur in all but a few very wet years. Typically, balanced conditions begin in April or May and continue through October.

The projects have two mechanisms for maintaining balanced conditions: their reservoir releases and their Delta exports. Reservoir releases plus any other water that reaches the Delta must provide enough water to meet Exhibit A and export requirements. If Exhibit A is not met, the projects increase reservoir releases, reduce exports, or both.

There are two kinds of reservoir releases during balanced conditions:

- Pass-through flows, which occur when the rate of inflow to the reservoir equals or exceeds the rate of outflow, causing either no net change or a net increase in reservoir storage.

- Storage withdrawals, which occur when the rate of outflow from a reservoir exceeds the rate of inflow, causing a net decrease in reservoir storage (a use of water that had been stored).

Sometimes, to maintain balanced conditions, the projects need only reduce either exports or the rate at which they are increasing reservoir storage; but as natural flows diminish, they must start making storage withdrawals to sustain their exports and provide the water required for inbasin uses.

The sharing formula of the proposed Agreement is really two formulas for two different situations that occur during balanced water conditions. One formula apportions the responsibility for making storage withdrawals to supply inbasin uses when flow other than from storage withdrawals (unstored flow) is insufficient to provide the full supply required to meet Exhibit A standards and Delta export demands. The formula for sharing this responsibility is:

Central Valley Project	75 percent
State Water Project	25 percent

The other formula defines the rights of the two parties to store or export water when unstored flow is available in excess of inbasin use requirements (including Exhibit A). The formula for sharing this water is:

Central Valley Project	55 percent
State Water Project	45 percent

The formulas are applied on a daily basis.

Figure 2 is a simplified graphic illustration of how the formulas operate—simplified in that is assumes a smooth decline and buildup of runoff, constant levels, and constant inbasin use requirements. The left side of the figure represents conditions as they might exist in the spring, when periods of balanced conditions often begin: project exports plus additions to project storage take all the unstored flow that is excess to inbasin use requirements.

They take it both by exporting from the Delta and storing in their reservoirs. The Central Valley Project is entitled to 55 percent of the available excess; the State Water Project to 45 percent.

As unstored flow declines with decreasing runoff, additions to project storage must decrease to maintain exports and inbasin uses. On a certain day, represented by line A-A' on Figure 2, no water is available to add to storage, and withdrawals from storage must begin thereafter to maintain exports. Until the day represented by line B-B', each project may export an amount of water equal to its storage withdrawal plus its share (as determined by the 55:45 formula) of unstored flow in excess of inbasin use requirements.

On day B-B', there is no longer any excess unstored flow to contribute to exports or to be shared 55:45, and exports equal storage withdrawals. Thereafter, storage withdrawals must be increased to exceed exports in the amount that allows inbasin use requirements to be fully met. The responsibility to make such storage withdrawals for inbasin uses is borne by the Central Valley Project and State Water Project in the proportions 75:25. While the 75:25 formula is in effect, both projects are entitled to export an amount equal to their storage withdrawals, less their allocated contributions to inbasin use.

As unstored flow increases in the fall and early winter, the steps are reversed. The early increases in unstored flow eliminate the need for storage withdrawals to meet inbasin uses, and the 75:25 formula goes out of effect. The 55:45 formula then takes over to apportion excess unstored flow. Finally, when unstored flow exceeds the sum of inbasin uses, exports, and additions to storage, and neither formula is needed; "excess water conditions" exist.

In actual operation, the progression of events would not be so smooth as is indicated by Figure 2. Inbasin use requirements change throughout the year, as do export levels, and runoff varies in a less regular pattern. Applied on a daily basis, the formulas are able to take these variations into account. Table 1 illustrates operation of the sharing formula through a period of balanced water conditions, with exports, storage, inbasin uses, and unstored flows all varying. The table condenses an entire period of balanced conditions into 6 representative days, illustrating how the sharing formula operates and how records would be kept to assure that water and responsibilities are being shared according to the formula.

The sharing formula (meaning one formula or the other) applies unless one project's storage withdrawal or unstored flow available for export exceeds its export capability. In this event, the excess storage withdrawal or unstored flow may be exported by the project that has the capability to do so, without affecting either project's future responsibilities or daily balance.

Article 7, Forecasting

Requires each party to furnish to the other, upon request, a forecast of operations.

Article 8, Water Measurement Responsibilities

Requires that the measurements necessary to implement Article 6 by made by each party.

Article 9, Reduction in United States and State Exports

Provides that the two parties shall discuss measures to minimize water shortages for export users whenever such shortages are forecast.

Article 10, Exchanges, Wheeling and Purchases of Water Supply

Generally specifies arrangements applicable to certain situations when one project's water is conveyed ("wheeled") through the other project's facilities.

10(a) Each project may, by written agreement, make its facilities available to the other project for the pumping and conveyance of water.

10(b) The State agrees to wheel for the United States to ease the potential impact of the May-June export limitations of Exhibit A on Central Valley Project operations. The State requires that the United States supply power for this wheeling according to Exhibit D and to pay minimum charges. In 1985 these charges would have been $0.21 per acre-foot of water conveyed or about $41,000.

10(c) The State also agrees to wheel for the United States when the Central Valley Project export facilities from the Delta to O'Neill Forebay are inoperative due to scheduled or unscheduled maintenance, provided the United States supplies the power and pays certain additional charges. These charges are at the same rate as those charged to State contractors for the use of the facilities used to wheel Central Valley Project water. In 1985 this rate was $8.44 per acre-foot of water conveyed.

10(d) If the United States wheels for the State due to scheduled or unscheduled maintenance of State Water Project facilities, the State will repay the United States with wheeling services on an acre-foot per acre-foot basis.

10(e) Each year the State will notify the United States of the charges which will be made for wheeling during that year.

10(f) Prior to June 30 of the year following the year in which wheeling services were provided, the State will bill the United States. The United States will make payment in 30 days.

10(g) Since the construction of the State Water Project, both projects have at various times provided wheeling services for the other projects during periods of scheduled or unscheduled maintenance. Services provided by the State to the United States exceed those services provided to the State by the United States. This subarticle requires that within 5 years of the execution of the Coordinated Operation Agreement, the parties agree to the amount and value of this imbalance in services rendered. The parties shall further agree on how this imbalance shall be resolved.

10(h) This subarticle requires the negotiation of a contract by December 31, 1988, for the sale of interim water to the State and purchase of conveyance services by the United States. The subarticle lay outs certain basic guidelines that are to be followed in the contract:

(1) Water sold to the State will be recallable when needed by Central Valley Project Contractors.

(2) During periods of water shortages, the United States will impose deficiencies on the water purchased by the State similar to those imposed on other Central Valley Project contractors.

(3) The State will provide conveyance services to the United States in an amount equal to the CVP water sold to the State. That water transported for the United States shall be at the same priority as the water transported by the State for its long-term contractors.

(4) In addition to the conveyance service provided to the United States on an acre-foot transported per acre-foot sold basis, the United States shall have the right to purchase any conveyance services in excess of that being used by the State or the State Water Project contractors. Water recalled from the State's use and other CVP supplies, such as temporary water sold under the Reclamation Reform Act, would be transported under this provision.

In order to accomplish the goals of this agreement, certain modifications to existing water rights permits held by the State and the United States may be required. If satisfactory amendments or permits are not received, either party may terminate the agreement on 180 days written notice at any time after December 31, 1988.

Article 11, Delta Standards

Requires that the CVP and the SWP be operated in conformity with the Delta standards set forth in Exhibit A. If those standards are changed in the future, Exhibit A will be revised to conform to those new standards only if the United States determines that the operation of the CVP in conformity with those new standards is "not inconsistent with congressional directives". This test of conformity derives from the applicable case laws. The determination of consistency requires that the United States carefully evaluate it ability to comply with applicable Reclamation laws in meeting all CVP authorized puposes and repayment requirements while operating to meet the new standards. If the United States determines that operation of the CVP in conformity with those new standards is inconsistent with congressional directives, it will ask the Department of Justice to bring an action to determine the applicability of those new Delta

standards to the CVP. Both parties preserve all rights, interests, and arguments they may have under existing laws and litigation and under any future litigation or laws which may become applicable.

Article 12, Monitoring

Exhibit C describes the monitoring activities for ensuring compliance with the Delta standards of Exhibit A. Article 12 provides that the parties will share equally the cost of such monitoring. It also provides for amendment of Exhibit C if necessary. Additional monitoring in the Delta and San Francisco Bay will be covered by separate agreements.

Article 13, Records

Allows each party full access to books and records of the other party insofar as they pertain to the Agreement.

Article 14, Periodic Review

Establishes general guidelines for joint review of operations of both projects. Such a review will occur every 5 years, or more frequently if requested by either party. The factors and procedures in Article 6, Exhibits B-1, B-2, and D, and the operations study used to develop Exhibits B-1 and B-2 will be revised when necessary. If the parties are unable to agree on revisions, or fail to enter into the contract described in Subarticle 10(h) by December 31, 1988, this article further specifies a negotiating procedure that includes a requirement to refer the problem to a 3-member Advisory Board. If the Board fails to make a unanimous recommendation within 24 months from the notice of negotiations in the case of the revisions, or 12 months for the contract, either party may unilaterally terminate the Agreement.

Article 15, Relation to Agreement of May 16, 1960

Suspends the Agreement of May 16, 1960, so long as the new Agreement remains in force. Upon termination of the new Agreement, the May 16, 1960, agreement would automatically be reinstated.

Article 16, New Facilities

Establishes principles that any yield created by construction of a new facility will be credited to the party that constructs the facility, or to both parties in the case of a joint undertaking. When a new facility is constructed, a review of the Agreement is required pursuant to Article 14.

Article 17, Project Service Area

Each party will respect the other's project service areas.

Article 18, Third Party Rights Unaffected

The Agreement is not intended to affect the rights of third parties.

Article 19, Effect of Waiver of Breach

The rights of the parties under the Agreement are unaffected if either party fails to object to a breach of the Agreement by the other party.

Article 20, Equal Employment Opportunities

The State agrees to standard provisions regarding treatment of employees and prospective employees without regard to race, color, religion, sex, or national origin.

Article 21, Contingent Provisions

Conditions performance of the parties on availability of funds.

Article 22, Officials Not to Benefit

None of the officials associated with the Agreement may derive private benefit therefrom.

Exhibits of the Agreement

This section reviews the three Exhibits of the Agreement.

Exhibit A

This is the set of flow and water quality standards that defines the Delta portion of inbasin use requirements. The standards are identical to the Delta water quality and flow standards of the State Water Resources Control Board's Decision 1485, except that the standards for Suisun Marsh which became effective in 1984 are omitted. The significance of Exhibit A is explained in the discussion of Article 6 and later in this chapter under "Analysis of Accomplishments of the Agreement."

Exhibits B-1 and B-2

These exhibits state annual water supplies for the Central Valley Project and State Water Project. Annual water supply is defined as the amount of water a project can deliver through a 7-year dry period such as occurred from 1928 to 1934, taking into account the allowable deficiencies. Deficiencies (delivery of less than the stated annual supply) are allowable in both projects as long as their total over the 7 years does not exceed 100 percent of the stated annual supply. In developing the annual water supply figures, the Central Valley Project was allowed no more than a 25 percent deficiency in any year. The State Water Project was allowed no more than a 50 percent deficiency for its agricultural contractors in any year and no deficiencies for municipal and industrial contractors.

The significance of Exhibits B-1 and B-2 is discussed later in this chapter under "Analysis of Accomplishments of the Agreement." The detailed derivation of the annual water supply figures is the subject of a separate document, "Technical Report on Determination of Annual Water Supplies for Central Valley Project and State Water Project," dated March 1984, which is incorporated into this Agreement by specific reference.

Exhibit C

This exhibit specifies 18 locations in the Delta where electrical conductivity measurement stations will be maintained to monitor compliance with the Exhibit A standards. Electrical conductivity is a measure of the concentration of mineral salts in water.

Exhibit D

This is an exchange procedure for the United States to supply power to the State Water Project for wheeling of Central Valley Project water. The water wheeled with power supplied through this exchange procedure is limited to that amount of reduced Central Valley Project exports caused by the limitations of May and June exports in Exhibit A. This exchange procedure will be followed to minimize the impact of export limitations on Central Valley Project power operations.

Exhibit E

This exhibit describes the water shortage and apportionment language that will be included in any contract for the sale of water to the State by the United States. The exhibit is substantially the same as an article in Contract No. 7-07-20-W0023 between the United States and Santa Clara Water District.

May 1985

COORDINATED OPERATION AGREEMENT (COA)

Briefing Statement

The Coordinated Operation Agreement is required for orderly and efficient functioning of California's two largest water resources development projects: the Federal Central Valley Project and the California State Water Project. The two projects are operated as separate entities by the U.S. Bureau of Reclamation and the California Department of Water Resources, but their operations are interrelated, their waters are commingled, and their effects on the environment occur jointly in many instances.

Central Valley Project,
History and Purpose

Early in the twentieth century, during a period of rapid growth in California, political leaders recognized a need for a large-scale water resources development project to meet flood control and water supply requirements in the State. Because the State had problems during the Depression of the 1930's selling bonds to finance such an undertaking, the Federal Government agreed to build what is now known as the Federal Central Valley Project.

Federal legislation authorizing the Central Valley Project in 1937 declared that its facilities "shall be used first for river regulation, navigation and flood control; second for irrigation and domestic uses; and third for power."

Major facilities of the Central Valley Project are shown in Figure 1. These facilities primarily serve to regulate, store, or divert flows of the Trinity, Sacramento, American, Stanislaus, and San Joaquin Rivers, all of which are tributary (by way of a diversion tunnel, in the case of the Trinity) to the Sacramento-San Joaquin Delta. The Central Valley Project pumps water from the Delta and exports it to the San Joaquin Valley via the Delta-Mendota and San Luis Canals and to Contra Costa County via the Contra Costa Canal. The CVP also diverts and delivers water upstream from the Delta with facilities that include the Tehama-Colusa, Corning, Folsom South, Madera, and Friant-Kern Canals.

The first unit of the Central Valley Project, the Contra Costa Canal, became operational in 1940, and many key facilities, such as Shasta Dam and the Delta-Mendota Canal, were operational by the early 1950's.

State Water Project
History and Purpose

After World War II, the pattern of rapid growth in California continued and accelerated. Consequently, State officials recognized the need for a water resources development system of far greater extent than was encompassed by the Federal Central Valley Project.

The California Water Resources Development Bond Act of 1960 was approved by the voters and authorized construction of the State Water Project. The first water deliveries through its major conveyance facility, the Governor Edmund G. Brown California Aqueduct (then known only as the California Aqueduct), took place in 1968.

The major facilities of the State Water Project are also shown in Figure 1. Constructed mainly in the 1960's and early 1970's, these facilities serve to regulate, store, and divert flows of the Feather River, a major tributary to the Sacramento River, and to export water from the Delta. The SWP delivers water pumped from the Delta to the southern San Joaquin Valley and southern California via the California Aqueduct and to parts of the San Francisco Bay area via the South Bay Aqueduct.

Capabilities of the Projects

Some ways in which the CVP and SWP differ include the ratio of urban to agricultural water users served by each project and the yields and storage capacities of the projects. Of the water now being delivered by the CVP, 95 percent goes to agricultural users. SWP water goes about equally to agricultural and urban use. The CVP's estimated yield (water supply available to the project on a reliable basis) is approximately 9.4 million acre-feet per year. The SWP delivers approximately 3.1 million acre-feet. The difference in yields derives partly from a difference in upstream storage capacities: the CVP's storage capacity in Clair Engle, Shasta, and Folsom Reservoirs totals 8 million acre-feet, while the capacity of the SWP's single significant upstream storage facility at Oroville is 3.5 million acre-feet. Due to its lesser upstream storage, the SWP relies more than the CVP on exporting surplus unstored flows available in the Delta during winter and spring.

Another significant difference between the two projects lies in their respective capacities for export from the Delta. The CVP can pump a maximum of 4,600 cubic feet per second (cfs) into the Delta-Mendota Canal. Adding the Contra Costa Canal brings CVP export capacity to 4,950 cfs. The SWP can pump 6,400 cfs at the Banks Pumping Plant. With its greater export capacity, the SWP is in a better position to take advantage of surplus flows when they are available in the Delta. Even so, the SWP will have to construct additional facilities, both in the Delta and elsewhere, to satisfy obligations coming due under existing contracts.

Affected Environment, Delta-Bay Estuary

The Delta-Bay estuary (Figures 2 and 3) is the Delta of the Sacramento and San Joaquin Rivers plus Suisun and San Francisco Bays. The estuary

connects its two principal tributary rivers and the Calaveras, Mokelumne, and Cosumnes Rivers to the Pacific Ocean. These rivers drain the Central Valley basin.

Some of the water reaching the Delta is used there and some is withdrawn for use elsewhere (exported). What remains flows into Suisun Bay, then into San Francisco Bay (including San Pablo Bay), and then to the ocean. The latter parts of this sequence may exist more in logic than in observable reality most of the time, because ocean tidal influences (e.g., 350,000 cfs) tend to overwhelm fresh water outflows (e.g., 6,000 to 12,000 cfs) once they get beyond the Delta.

The water quality and flow standards for the Delta included in the proposed Coordinated Operation Agreement as Exhibit A are the same as those of Decision 1485. Negotiations are currently underway to determine how best to achieve standards for Suisun Marsh.

In Decision 1485, the State Water Resources Control Board emphasized that consideration must be given to the outflow needs of the San Francisco Bay and directed that studies to investigate these outflow needs be initiated by October 1979. The studies are in progress and the results will be considered when the State Board begins its review of Decision 1485 in 1986.

Development of Prior Coordinated Operation Agreements

Even before the State Water Project began operating, State and Federal officials realized that understandings would be needed to coordinate its operations with those of the Central Valley Project. Accordingly, an agreement was signed on May 16, 1960, to:

- Provide a method of allocating shortages in water supplies by prorating the shortages on the basis of specified annual diversion amounts.

- Resolve the protests of each party to the applications of the other for water rights consistent with these annual diversion amounts.

Although the 1960 agreement provides for coordinated operations, its Article 16 specifically recognized that additional criteria would be needed for actually operating the two projects on a coordinated basis. Negotiations on the operating criteria culminated in the draft Coordinated Operation Agreement of May 13, 1971. That draft agreement provides a procedure whereby the project operators of the Central Valley Project and State Water Project can determine how much water each project must supply from its own sources for uses in the Sacramento Valley, including the Delta, and how much water each project is entitled to export from the Sacramento Valley.

Since 1971, the Bureau of Reclamation and the Department of Water Resources have operated the CVP and SWP in a coordinated manner by means of annual letters of understanding. In these annual letters, they have agreed to operate according to the terms of the 1971 draft agreement, with modifications. In 1978, the State Water Resources Control Board adopted Decision 1485 which established new water quality standards for the delta. In response, the annual letter agreements have provided that the projects will be operated to meet those standards.

Development of the Proposed Coordinated Operation Agreement

By 1979, it became apparent that the 1971 draft agreement should be renegotiated. The changed circumstances that necessitated renegotiation were related to data gathered during the 1976-77 drought, the State Water Resources Control Board's Decision 1485, the Secretary of the Interior's decision to voluntarily meet certain Delta water quality standards set forth in Decision 1485, and the fact that not all of the facilities described in the 1971 draft agreement had been constructed.

Formal negotiating teams were formed by the Bureau and the Department to reevaluate operating criteria, determine the water supplies available for each project, and develop a new operation agreement.

The proposed Agreement provides a basis for State and Federal consensus on coordinated operation of existing project facilities to meet expected demands and Delta water quality standards according to an agreed-upon sharing formula. The Agreement also provides flexibility to adapt to changing conditions.

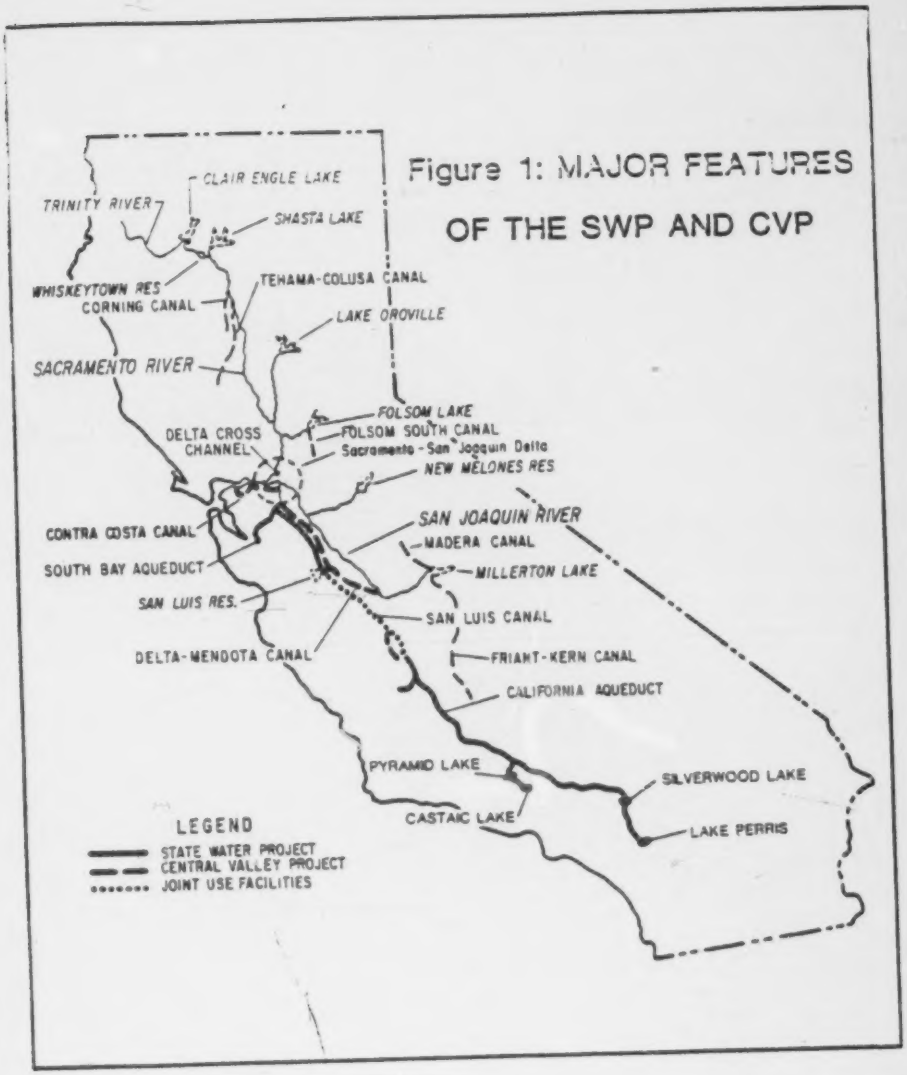


Figure 1: MAJOR FEATURES OF THE SWP AND CVP
CLAIR ENGLE LAKE
TRINITY RIVER
SHASTA LAKE
WHISKEYTOWN RES
CORNING CANAL
TEHAMA-COLUSA CANAL
LAKE OROVILLE
SACRAMENTO RIVER
FOLSOM LAKE
FOLSOM SOUTH CANAL
DELTA CROSS CHANNEL
Sacramento - San Joaquin Delta
NEW MELONES RES
SAN JOAQUIN RIVER
CONTRA COSTA CANAL
MADERA CANAL
SOUTH BAY AQUEDUCT
MILLERTON LAKE
SAN LUIS RES.
SAN LUIS CANAL
DELTA-MENDOTA CANAL
FRIANT-KERN CANAL
CALIFORNIA AQUEDUCT
PYRAMID LAKE
SILVERWOOD LAKE
CASTAIC LAKE
LAKE PERRIS
LEGEND
STATE WATER PROJECT
CENTRAL VALLEY PROJECT
JOINT USE FACILITIES

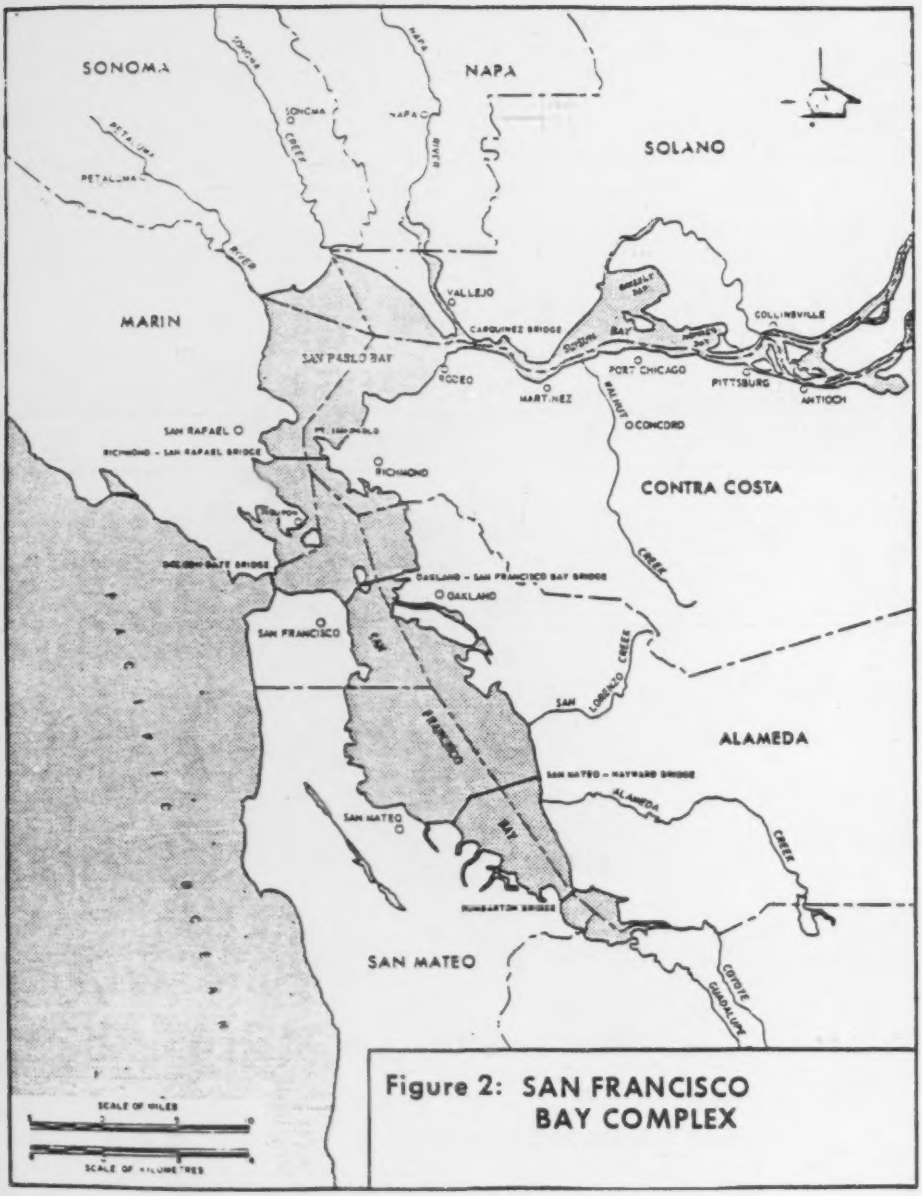


Figure 2: SAN FRANCISCO BAY COMPLEX

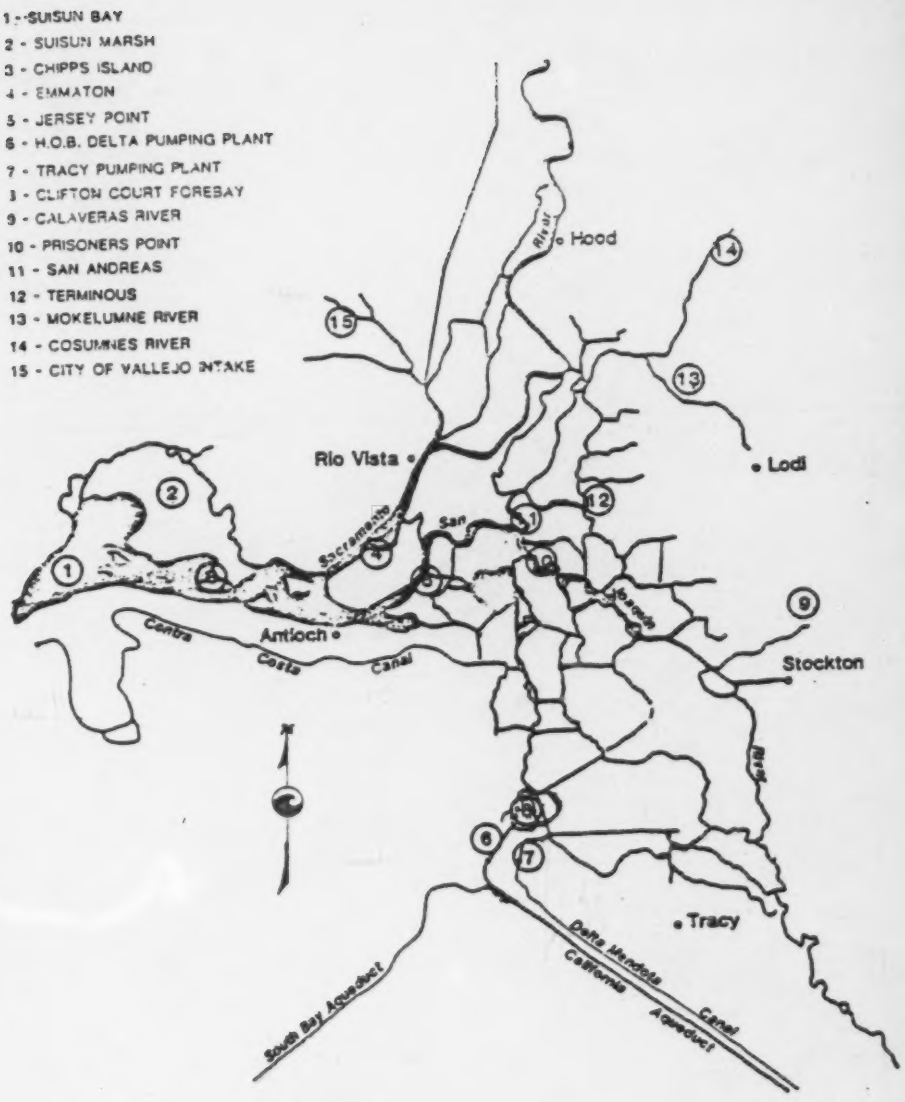


Figure 3: SACRAMENTO - SAN JOAQUIN DELTA

Chronology of Events and Decisions Relating to the Development of the Coordinated Operation Agreement

Late 1800's-Early 1900's:	Various State and Federal agencies, departments, and commissions study the Central Valley and its water problems. These studies result in the State Water Plan, which includes the major features of the CVP.
1927:	State files for water rights for the major features of the State Water Plan. Other filings are made by the State in 1938.
1928 thru 1934:	Worst drought of recent history occurs in California. This gives impetus to legislation authorizing the CVP. Delta water quality is significantly degraded because of drought.
1933:	State passes the Central Valley Project Act authorizing construction of the CVP. Financing will be by public bonds. Bonds fail to sell, and the State asks Federal Government to aid or undertake the CVP.
1935:	Rivers and Harbors Act of 1935 authorizes the Federal CVP. Numerous other acts follow to authorize the various units of the CVP. CVP is to follow Reclamation Law.
1938:	Construction of Friant and Shasta Dams begins; completed in 1943 and 1944, respectively.
1938:	USBR is assigned water rights filed by the State for the CVP.
1956:	Cooperative Water Right Studies are undertaken by the USBR, DWR, and Sacramento River and Delta Water Association to determine the availability of water to the CVP, the proposed SWP, and the degree to which the projects might impact existing water rights. The studies generally show water is not available for appropriation in July and August of most years.
1958 thru 1961:	Hearings on USBR water rights applications for Shasta Dam and Delta facilities are held.
May 16, 1960:	Negotiations with DWR during hearings result in May 16, 1960, agreement providing for coordination of operations between the CVP and the soon-to-be-built State Water Project. State Water Rights Board makes this agreement a permit condition in USBR permits.
Late 1960's:	USBR and DWR undertake joint studies to define the yields of the CVP and SWP.

1971:	Draft Coordinated Operation Agreement developed. Signing of the COA was stopped by a lawsuit alleging that an EIS was required. An EIS was never prepared but an agreement is adopted annually by USBR and DWR for operational purposes.
1971:	Decision 1379 adopted by State Water Resources Control Board. Imposes Delta outflow and water quality standards on the CVP and SWP. These standards increase dramatically the Delta outflow requirements. An injunction against the decision was obtained and the standards were never implemented.
1976-1977:	SWRCB reopens Delta hearings. Hearings only address permits of CVP and SWP. This coincides with driest single year in recent history.
1978:	Decision 1485 adopted by SWRCB. Decision places responsibility to meet Delta outflow and water quality standards on the CVP and SWP. This replaces D-1379, but still requires increased Delta outflow for which the projects were not designed. USBR and DWR begin protesting all water right applications which affect their ability to meet Delta outflow requirements.
1979:	USBR voluntarily operates to meet D-1485 standards pending completion of a coordinated operation agreement. Negotiations for new CVP contracts are suspended; negotiations for a revised COA begin; numerous parties bring suit on D-1485.
April 1984:	Superior Court decision on D-1485 Delta water cases (Figone Decision) concluded SWRCB did not develop standards properly and the priorities of CVP and SWP were not correctly recognized. SWRCB required to establish new Delta standards.
May 1985:	Coordinated Operation Agreement completed by Federal and State negotiators.

Highlights of the Agreement

The COA is important to water resource development by the two projects in certain critical ways:

- It commits both the Central Valley Project and the State Water Project to meeting water quality and outflow standards for the Delta that are equivalent to the standards contained in the State Water Resources Control Board's Decision 1485.
- It establishes mutually recognized annual water supplies of the two projects.
- And it provides guiding principles for cooperative utilization of the facilities of the two projects through the wheeling and sale of water.

Delta Water Quality and Outflow Standards

The Bureau has binding legal commitments to meet specified Delta water quality standards as stated in the water quality provisions of its water rights exchange contracts with water users in the lower San Joaquin basin. In these contracts, the Bureau has agreed to supply specified qualities of water at its Tracy Pumping Plant. The Tracy standards are less stringent and more limited than those set forth in Decision 1485. The history of the CVP has been to operate only for these "Tracy standards" in an extreme drought year.

However, the State Water Resources Control Board has held the Central Valley Project and State Water Project jointly and severally responsible for maintaining Delta standards. Any possibility that the Central Valley Project will not be operated to provide its share of the water needed to meet these standards represents a serious threat to the State Water Project. The

Department of Water Resources might have to provide any additional water necessary to meet the standards with the State Water Project's limited and already fully committed water supplies, or petition the Water Resources Control Board for relief. The current Agreement eliminates this potential dilemma by mutually committing the two projects to meeting the Decision 1485 Delta standards.

Annual Water Supplies

The Agreement establishes mutually recognized annual water supplies of the Central Valley Project and State Water Project, in Exhibit B-1 for 1980 and in Exhibit B-2 for 2020. These supplies were computed using mathematical procedures wherein the operational capabilities of the two projects are superimposed on sets of conditions representing a level of development (year), demand for water from the projects, and naturally occurring hydrology.

The water supply computations reflect a "first in time" principle that is a key element of the Agreement. Under this principle, the CVP facilities built before the State Water Project existed are recognized as having whatever water supply yield they would have if the later project had not been built. The San Luis Unit of the CVP and the facilities of the State Water Project have equal claims on the remaining water, since the San Luis Unit is a jointly constructed facility of the two projects and was a later addition to the CVP.

The supplies computed for 1980 in Exhibit B-1, 6.9 million acre-feet for the Central Valley Project and 3.7 million acre-feet for the State Water Project, were used to derive the sharing formulae of Article 6. The

73:25 formula apportions the shares of Sacramento basin demands which must be met by the CVP and the SWP, respectively. This formula was carried over from the previous draft Coordinated Operation Agreement and was regarded by negotiators for both agencies as fair; CVP can serve a much larger portion of the demand in the Sacramento basin and has contracted with the water users in that area for this purpose. The 55:45 formula allows the projects to achieve the 1980-level supplies of Exhibit B-1 during a drought, such as occurred from 1928 to 1934. This formula apportions the CVP's and SWP's shares of water available for export from the Delta or storage in lieu of such exports. Both formulae are empirically derived and are to be used on a daily basis to ensure appropriate allocation of annual supplies.

The supplies computed for the year 2020 and displayed in Exhibit B-2 are illustrative of how much water each project may have at that development level under certain principles and assumptions accepted by negotiators of the Agreement. Central Valley Project supplies are higher for 2020 than for 1980 because for the 2020 level it is assumed that the CVP is making full use of water it can rightfully claim and deliver to existing or potential contractors without new yield-augmenting facilities. State Water Project supplies are lower for 2020 than for 1980, partly because much of the CVP increase in supply over the same time span represents water that the SWP was using at the 1980 level. The State Water Project was using this water because the Central Valley Project lacked either the demand for it or the means to deliver it. As Central Valley Project demands and deliveries increase upstream from the Delta, less water reaches the Delta for export by the State Water Project.

The CVP year 2020 annual supply stated in Exhibit B-2 may be reduced by the commitment of additional water for fish protective flows in the Trinity River. Such an allocation is subject to the exercise of Secretarial discretion based on studies curently underway to find ways to restore Trinity River fisheries.

By quantifying water supplies, Exhibits B-1 and B-2 (particularly B-2) reflect the intention that the Central Valley Project will enter into new contracts. The Central Valley Project will be able to utilize its full year 2020 water supply by completing a marketing program to meet authorized service area needs.

The new Coordinated Operation Agreement would not in and of itself trigger any new contracts; each contract would be a separate and independent action subject to studies on water availability and evaluation of potential environmental impacts.

Wheeling Arrangements

At times each project requires water conveyance services, or wheeling, available through the other project's facilities. Article 10 of the new Agreement provides for wheeling in all situations. These situations occur: during times of planned or unplanned project maintenance; whenever the Central Valley Project curtails export pumping at the Delta during May and June to minimize the effects of such pumping on young striped bass; at times when the CVP has sold water to the State and the State has agreed to wheel an equivalent amount of CVP water for CVP contractor use; and whenever the SWP has excess capacity available and the CVP needs to wheel water for other purposes.

ADDITIONAL VIEWS OF MR. EVANS

H.R. 3113 provides for the coordinated operation of the Federal Central Valley Project and the California State Water Project. The bill will permit more effective use of the two major California water projects to resolve environmental conflicts and provide more efficient use of a limited water supply. As amended in Committee, the bill also recognizes that sufficient quantities of water will be necessary for the adequate mitigation of adverse impacts on fish and wildlife by the Central Valley Project. I know the California Congressional delegation, the Bureau of reclamation, and the State of California have worked long and hard to bring this measure to fruition. They are to be congratulated for their efforts.

The bill also provides authority for an additional $600,000,000 in loans for the Bureau of Reclamation's Small Reclamation Projects program. The bill will allow for much needed rehabilitation and improvement of many small irrigation projects throughout the reclamation West. I strongly support this program.

During the Committee's consideration of this measure, it rejected an amendment to impose interest on the entire amount of loans for irrigation. I voted against the amendment. Before I did, I listened with care to the arguments of its proponents. And I was deeply troubled by the characterization of the small reclamation program as a "subsidy," as if there was something devious or even unusual about such a program.

I submit that there is not very much difference except in terminology between what some would call an interest subsidy and what others would call a grant. We have traditionally had grants for a multitude of purposes. Almost all grants affect one or more states to a much greater degree than they do some others. And I would include in the concept of "grants" specific tax expenditures or tax exemptions, whichever way you identify them.

All of these provisions tend to be regional in nature or aimed at specific groups. I think the much more fundamental question is not whether we pick and choose and say we ought to pay market interest here, or limited interest there, or no interest. The question is what kind of policy is best for the country and for the citizens we all represent or that we separately represent.

As Senators we have two responsibilities. One is to represent our own State and that State's interest. The other is to represent the interests of the entire United States, even though, as representatives of our own constituents, we may not be the unique beneficiaries of a particular bill or program.

Admittedly, I found the amendment offered by the Senator from Oklahoma appealing. But I voted against it. I did so because I believe that we must visit reclamation programs in a much more comprehensive way and set much more comprehensive policies.

And when we do, I am confident we will find that each State and each Senator will have at least one and perhaps several significant interests where someone can point out a benefit that would be classified as an interest "subsidy," a grant, or a tax expenditure. I believe we must deal with these programs in a comprehensive way. Frankly, I think some significant changes ought to be made and that we should move closer toward payment by beneficiaries of the Federal programs they sponsor. But I think we ought to do it as an overall national policy. A national water policy is needed for irrigation, similar to that currently under consideration in Congress for flood control, navigation, and harbor construction programs. The amendment offered by the Senator from Oklahoma clearly does not address the national concern.

DANIEL J. EVANS.

MINORITY VIEWS OF MESSRS. NICKLES AND METZENBAUM

In the passage of the Small Reclamation Projects Act, which authorizes another $600 million for irrigation, flood control, and multiple purpose water resource development projects, the Committee on Energy and Natural Resources has departed from a sound course for public water resources policy. A significant minority protested the continuation of federal subsidies for reclamation loans.

As currently administered, 75 percent of the reclamation loans for which funds have been provided bear no interest. The government is also providing subsidized water to farmers who are producing crops which are already in surplus. In addition, prospective recipients of the interest-free loans are not required to document financial need for these loans. This policy not only ignores basic free market principles but also results in the Federal government loaning money at no cost to groups who in some cases have received an "A" rating for their bonds.

As an alternative to providing a full interest subsidy to reclamation loans, we support a 5 percent interest rate for irrigation project loans. While the Administration supports a full interest rate on all irrigation loans, we feel that the smaller 5 percent rate provides a compromise that will preserve a balance between rational fiscal policy and program incentives for water resource development.

Compared to the cost of the current no-interest program, a 5 percent rate placed on non surplus crop irrigation projects would save approximately $200 million over the life of the $600 million program. Contrary to some arguments of those who favor the no-interest program, there is no proof that a 5 percent interest would dismantle the program. Indeed, there is some indication that the program funds would still be in significant demand with a 5 percent interest rate.

Bearing in mind the foregoing, it is our contention that sound public policy would be best served by providing a minimal interest rate on crop irrigation projects. We believe in maintaining the balance between a reasonable and affordable water program and the overall fiscal needs of the nation. We can maintain such a balance while still providing reasonable incentives for water resource development.

DON NICKLES.
HOWARD M. METZENBAUM.

Attachment.

EXECUTIVE OFFICE OF THE PRESIDENT,
OFFICE OF MANAGEMENT AND BUDGET,
Washington, DC, February 25, 1986.

Hon. DON NICKLES,
U.S. Senate, Washington, DC.

DEAR DON: This letter is in response to your recent letter requesting our opinion on whether to charge 5% interest on irrigation loans under the Small Reclamation Projects Act (SRPA).

We agree completely that granting interest-free loans for irrigation projects as allowed under current law for the SRPA program is no longer appropriate. Your proposal to charge 5% interest would certainly be a significant improvement over current law. However, we believe that charging this level of interest still retains a substantial interest subsidy for irrigation projects which cannot be justified during these times of Gramm-Rudman-Hollings budget constraints and surpluses of agricultural production.

Consequently, the President's FY 1987 Budget requests funding for three new SRPA loans contingent upon enactment of legislation to (1) require the repayment of all new loans, including irrigation loans, with interest at current Treasury borrowing costs plus one-eighth of one percent to fund transaction costs; and (2) increase the existing appropriation ceiling of $600 million by an additional $600 million. The Administration is preparing legislation to amend the Small Reclamation Projects Act to accomplish these objectives.

The Administration strongly supports charging interest on SRPA loans for irrigation purposes. I look forward to working with you to achieve this objective.

Sincerely yours,

JAMES C. MILLER III, *Director.*

CHANGES IN EXISTING LAW

In compliance with paragraph 12 of Rule XXV of the Standing Rules of the Senate, the Committee notes the following changes in existing law made by the bill H.R. 3113, as ordered reported (existing law proposed to be omitted is enclosed in black brackets, new matter is printed in italic, and existing law to which no change is proposed is shown in roman):

SMALL RECLAMATION PROJECTS ACT OF 1956, AS AMENDED

SEC. 1. The purpose of this subchapter is to encourage State and local participation in the development of projects under the Federal reclamation laws, *with emphasis on rehabilitation and betterment of existing projects for purposes of significant conservation of water, energy, and the environment and for purposes of water quality control,* and to provide for Federal assistance in the development of similar projects in the seventeen western reclamation States by non-Federal organizations.

SEC. 2.

* * * * * * *

SEC. 3. Any organization desiring to avail itself of the benefits provided in this Act shall submit a proposal therefor to the Secretary in such form and manner as he shall prescribe. Each such proposal shall be accompanied by a payment of [$1,000] *$5,000* to defray, in part, the cost of examining the proposal.

SEC. 4.

* * * * * * *

(b)*(1)* Every such proposal shall include a showing that the organization already holds or can acquire all lands and interests in land (except public and other lands and interests in land owned by the United States which are within the administrative jurisdiction of the Secretary and subject to disposition by him) and rights, pursuant to applicable State law, to the use of water necessary for the successful construction, operation, and maintenance of the project and that it is ready, able, and willing to finance otherwise [by loan and grant] *by loan and grant of Federal funds* under this Act such portion of the cost of the project (which portion shall include all costs of acquiring lands, interests in land, and rights to the use of water, except as provided in Section 5(b)(2) hereof, as the Secretary shall have advised is proper in the circumstances.

(2) The Secretary shall require each organization to contribute toward the cost of the project (other than by loan and/or grant of Federal funds) an amount equal to 25 percent or more of the allowable estimated cost of the project: Provided, That the Secretary, at his discretion, may reduce the amount of such contribution to the extent that he determines that the organization is unable to secure

financing from other sources under reasonable terms and conditions, and shall include letters from lenders or other written evidence in support of any finding of an applicant's inability to secure such financing in any project proposal transmitted to the Congress: Provided further, That under no circumstances shall the Secretary reduce the amount of such contribution to less than 10 percent of the allowable estimated total project costs. In determining the amount of the contribution as required by this paragraph, the Secretary shall credit toward that amount the cost of investigations, surveys, engineering, and other services necessary to the preparation of proposals and plans for the project as required by the Secretary, and the costs of lands and rights-of-way required for the project, and the $5,000 fee described in Section 3 of this Act. In determining the allowable estimated cost of the project, the Secretary shall not include the amount of grants accorded to the organization under Section 5(b).

(c) At such time as a project is found by the Secretary and the Governor of the State in which it is located (or an appropriate State agency designated by him) to be financially feasible, is determined by the Secretary to constitute a reasonable risk under the provisions of this Act, and is approved by the Secretary, such findings and approval shall be transmitted to the Congress. *Each project proposal transmitted by the Secretary to the Congress shall include a certification by the Secretary that an adequate soil survey and land classification has been made, or that the successful irrigability of those lands and their susceptibility to sustained production of agricultural crops by means of irrigation has been demonstrated in practice. Such proposal shall also include an investigation of soil characteristics which might result in toxic or hazardous irrigation return flows.* The Secretary, at the time of submitting the project proposal to Congress or at the time of his determination that the requested project constitutes a reasonable risk under the provisions of this Act, may reserve from use or disposition inimical to the project any lands and interests in land owned by the United States which are within his administrative jurisdiction and subject to disposition by him and which are required for use by the project. Any such reservation shall expire at the end of two years unless the contract provided for in section 5 of this Act shall have been executed.

* * * * * * *

SEC. 5. Upon approval of any project proposal by the Secretary under the provisions of section 4 of this Act he may negotiate a contract which shall set out, among other things—

* * * * * * *

(b) the maximum amount of any grant to be accorded the organization. Said grant shall not exceed the sum of the following: (1) the costs of investigations, surveys, and engineering and other services necessary to the preparation of proposals and plans for the project allocable to fish and wildlife enhancement or public recreation; (2) one-half the costs of acquiring lands or interests therein to serve exclusively the purposes of fish and wildlife enhancement or public recreation, plus the costs of acquiring joint use land and interests

therein properly allocable to fish and wildlife enhancement and public recreation; (3) one-half the costs of basic public outdoor recreation facilities or facilities serving fish and wildlife enhancement purposes exclusively; (4) one-half the costs of construction of joint use facilities properly allocable to fish and wildlife enhancement or public recreation; [and (5) that portion of the estimated cost of constructing the project which, if it were constructed as a Federal reclamation project, would be properly allocable to functions, other than recreation and fish and wildlife enhancement, which are nonreimbursable under general provisions of law applicable to such projects: Provided, That the cost of constructing the project as used in this subsection shall be exclusive of the cost of lands and interests in land;] *(5) that portion of the estimated cost of constructing the project which, if it were constructed as a Federal reclamation project, would be properly allocable to functions, other than recreation and fish and wildlife enhancement and flood control, which are nonreimbursable under general provisions of law applicable to such projects; and (6) that portion of the estimated cost of constructing the project which is allocable to flood control and which would be nonreimbursable under general provisions of law applicable to projects constructed by the Secretary of the Army.*

(c) a plan of repayment by the organization of (1) the sums lent to it in not more than [fifty] *forty* years from the date when the principal benefits of the project first become available; (2) [interest, as determined by the Secretary of the Treasury, as of the beginning of the fiscal year in which the contract is executed, on the basis of the computed average interest rate payable by the Treasury upon its outstanding marketable public obligations, which are neither due nor callable for redemption for fifteen years from date of issue, and by adjusting such average rate to the nearest one-eighth of 1 per centum, on that portion of the loan which is attributable to furnishing irrigation benefits in each particular year to land held in private ownership by a qualified recipient, as such term is defined in Section 202 of the Reclamation Reform Act of 1982, in excess of nine hundred and sixty irrigable acres, or by a limited recipient, as such term is defined in Section 202 of the Reclamation Reform Act of 1982, in excess of three hundred and twenty irrigable acres; and (2) in the case of any project involving an allocation to domestic, industrial, or municipal water supply, commercial power, fish and wildlife enhancement, or public recreation, interest on the unamortized balance of an appropriate portion of the loan at a rate as determined in (2) above; Except that portion of said allocation attributable to furnishing benefits to a facility operated by an agency of the United States, which portion shall bear no interest;] *interest, as determined by the Secretary of the Treasury, as of the beginning of the fiscal year in which the contract is executed, on the basis of the average market yields on outstanding marketable obligations of the United States with remaining periods to maturity comparable to the applicable reimbursement period of the project, adjusted to the nearest one-eighth of 1 percent on the unamortized balance of any portion of the loan:*

(A) which is attributable to furnishing irrigation benefits in each particular year to land held in private ownership by a qualified recipient, as such term is defined in Section 202 of the

Reclamation Reform Act of 1982, in excess of nine hundred and sixty irrigable acres, or by a limited recipient, as such term is defined in Section 202 of the Reclamation Reform Act of 1982, in excess of three hundred and twenty irrigable acres; or

(B) which is allocated to domestic, industrial, or municipal water supply, commercial power, fish and wildlife enhancement, or public recreation except that portion of such allocation attributable to furnishing benefits to a facility operated by an agency of the United States, which portion shall bear no interest."

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SEC. 6.

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SEC. 7.

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SEC. 8. The planning and construction of projects undertaken pursuant to this subchapter shall be subject to all procedural requirements and other provisions of the Fish and Wildlife Coordination Act (48 Stat. 401), as amended (16 U.S.C. 661 et seq.). *The Secretary shall transfer to the Fish and Wildlife Service or to the National Marine Fisheries Service, out of appropriations or other funds made available under this Act, such funds as may be necessary to conduct the investigations required to carry out the purposes of this section.*

SEC. 9.

* * * * * * *

SEC. 10. There are authorized to be appropriated, such sums as may be necessary, but not to exceed $600,000,000 to carry out the provisions of this Act *and, effective October 1, 1986, not to exceed an additional $600,000,000: Provided,* That the Secretary shall advise the Congress promptly on the receipt of each proposal referred to in Section 3, and no contract shall become effective until appropriated funds are available to initiate the specific proposal covered by each contract. All such appropriations shall remain available until expended and shall, insofar as they are used to finance loans made under this Act, be reimbursable in a manner hereinabove provided. *Not more than 20 percent of the total amount of additional funds authorized to be appropriated, effective October 1, 1986, for loans and grants pursuant to this Act shall be for projects in any single State.*

FEDERAL POWER ACT, AS AMENDED, PART I

* * * * * * *

SEC. 10. All licenses issued under this Act shall be on the following conditions:

* * * * * * *

(e) That the licensee shall pay to the United States reasonable annual charges in an amount to be fixed by the Commission for the purpose of reimbursing the United States for the costs of the administration of this part; for recompensing it for the use, occupancy,

and enjoyment of its lands or other property; and for the expropriation to the Government of excessive profits until the respective States shall make provision for preventing excessive profits or for the expropriation thereof to themselves, or until the period of amortization as herein provided is reached, and in fixing such charges the Commission shall seek to avoid increasing the price to the consumers of power by such charges, and any such charges may be adjusted from time to time by the Commission as conditions may require: *Provided,* That when licenses are issued involving the use of Government dams or other structures owned by the United States or tribal lands embraced within Indian reservations the Commission shall, subject to the approval of the Secretary of the Interior in the case of such dams or structures in reclamation projects and, in the case of such tribal lands, subject to the approval of the Indian tribe having jurisdiction of such lands as provided in Section 16 the Act of June 18, 1934 (48 Stat. 984) fix a reasonable annual charge for the use thereof, and such charges may with like approval be readjusted by the Commission at the end of twenty years after the project is available for service and at periods of not less than ten years thereafter upon notice and opportunity for hearing: *Provided further,* That licenses for the development, transmission, or distribution of power by States or municipalities shall be issued and enjoyed without charge to the extent such power is sold to the public without profit or is used by such State or municipality for State or municipal purposes, except that as to projects constructed or to be constructed by States or municipalities primarily designed to provide or improve navigation, licenses therefor shall be issued without charge; and that licenses for the development, transmission, or distribution of power for domestic, mining, or other beneficial use in projects of not more than two thousand horsepower installed capacity may be issued without charge, except on tribal lands within Indian reservations; but in no case shall a license be issued free of charge for the development and utilization of power created by any Government dam and that the amount charged therefor in any license shall be such as determined by the [Commission.] *Commission: Provided, however, That no charge shall be assessed for the use of any Government dam or structure by any licensee if, before January 1, 1985, the Secretary of the Interior has entered into a contract with such licensee that meets each of the following requirements:*

(A) The contract covers one or more projects for which a license was issued by the Commission before January 1, 1985;

(B) The contract contains provisions specifically providing each of the following:

(i) a powerplant may be built by the licensee utilizing irrigation facilities constructed by the United States;

(ii) the powerplant shall remain in the exclusive control, possession, and ownership of the licensee concerned;

(iii) all revenue from the powerplant and from the use, sale, or disposal of electric energy from the powerplant shall be, and remain, the property of such licensee. This proviso shall apply to any project covered by a contract referred to in this proviso only during the term of such contract unless otherwise provided by subsequent Act of Con-

gress. In the event an overpayment of any charge due under this section shall be made by a licensee, the Commission is authorized to allow a credit for such overpayment when charges are due for any subsequent period.

* * * * * * *

APPENDIX

AGREEMENT

BETWEEN

THE UNITED STATES OF AMERICA

AND

THE DEPARTMENT OF WATER RESOURCES OF

THE STATE OF CALIFORNIA

FOR

COORDINATED OPERATION

OF THE

CENTRAL VALLEY PROJECT

AND THE

STATE WATER PROJECT

(This coordination agreement suspends the agreement of May 16, 1960, between the United States and the State of California.)

United States of America
Department of the Interior
Bureau of Reclamation
Central Valley Project
California

State of California
The Resources Agency
Department of Water Resources
State Water Project

No. 14-06-200-8363

AGREEMENT BETWEEN THE UNITED STATES OF AMERICA AND THE DEPARTMENT OF WATER RESOURCES OF THE STATE OF CALIFORNIA FOR COORDINATED OPERATION OF THE CENTRAL VALLEY PROJECT AND THE STATE WATER PROJECT

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AGREEMENT BETWEEN
THE UNITED STATES OF AMERICA
AND
THE DEPARTMENT OF WATER RESOURSES OF
THE STATE OF CALIFORNIA
FOR COORDINATED OPERATION OF THE
CENTRAL VALLEY PROJECT AND THE STATE WATER PROJECT

1. THIS AGREEMENT, made the _____ day of _____, 198__, pursuant to the Act of Congress approved _____, P.L. _____, and pursuant to the California Central Valley Project Act, which is Part 3, Division 6 (commencing at Section 11100) of the California Water Code, and the California Water Resources Development Bond Act, Chapter 8, Part 6, Division 6 (commencing at Section 12930) of the California Water Code, between THE UNITED STATES OF AMERICA, herein called the United States, acting through the Bureau of Reclamation, Department of the Interior, represented by the Contracting Officer executing this agreement, and THE DEPARTMENT OF WATER RESOURCES OF THE STATE OF CALIFORNIA, herein called the State, represented by the Director of Water Resources.

EXPLANATORY RECITALS

2. The United States has under construction and is operating the Central Valley Project, California, for the

development, conservation, control, and utilization of water resources in California.

The State has under construction and is operating initial facilities of the State Water Resources Development System, herein called the State Water Project, for the development, conservation, control, and utilization of water resources in California.

The United States and the State entered into an agreement on May 16, 1960, Article 16 of which recognizes the need for criteria for the coordinated operation of the Central Valley Project and the State Water Project.

Certain basic assumptions of that agreement require modification in light of subsequent developments and changes in the two projects.

The United States and the State had prepared a May 13, 1971, Draft Agreement which would have supplemented the Agreement of May 16, 1960.

The United States and the State have in the past been operating under annual letter agreements implementing the May 13, 1971, Draft Agreement.

The United States and the State by entering into this agreement will suspend the Agreement of May 16, 1960; but it is recognized that the legal positions of the parties regarding any interpretation of the terms of said agreement are preserved.

The United States and the State will observe reservoir operational criteria prescribed by the United States Corps of Engineers to minimize flood hazards.

The United States and the State each plans to meet all requirements and objectives of its project and to coordinate the operation of their projects so as not to adversely affect the rights of other parties and to conserve water.

The State and the United States intend to build additional water storage and transportation facilities.

Both the United States and the State have, pursuant to applications filed with the State Water Resources Control Board (formerly State Water Rights Board), received permits for appropriation of unappropriated water in furtherance of their respective projects.

It is in the best interest of the United States and the State to agree on the use of water rights as set forth in this agreement rather than litigate such uses as between the two projects and potentially all other water users in the Central Valley of California.

Both the State and the United States are dedicated to utilizing their existing and future water conservation

facilities so as to provide the maximum benefits to the people of California and the Nation and believe that through the coordinated and cooperative operation of State and Federal facilities, these benefits can be maximized.

NOW, THEREFORE, it is agreed:

DEFINITIONS

3. When used in this agreement, the following shall have the meanings hereinafter set forth:

(a) "Sacramento Valley inbasin uses" are legal uses of water in the Sacramento Basin including the water required under the provisions of Exhibit A.

(b) "Balanced water conditions" are periods when it is agreed that releases from upstream reservoirs plus unregulated flow approximately equal the water supply needed to meet Sacramento Valley inbasin uses, plus exports.

(c) "Excess water conditions" are periods when it is agreed that releases from upstream reservoirs plus unregulated flow exceed Sacramento Valley inbasin uses, plus exports.

(d) "United States storage withdrawal" is the sum of "Whiskeytown storage withdrawal" which is the positive daily mean flow computed by subtracting the daily mean local inflow to Whiskeytown Lake (total inflow excluding the flow through the Judge Francis Carr Powerplant) from the sum of the daily mean diversions from (i) Whiskeytown Lake to Spring Creek Powerplant, (ii) the Whiskeytown Dam releases to Clear

Creek, and (iii) measured water deliveries from Whiskeytown Lake; and the positive sum of:

(1) "Shasta storage withdrawal" which is the daily mean flow computed by subtracting the sum of (i) the daily mean inflow into Shasta Lake and (ii) the daily mean discharge from Spring Creek Powerplant from the sum of (i) the Keswick Dam releases to the Sacramento River and (ii) measured water deliveries from Shasta and Keswick Lakes; and

(2) "Folsom storage withdrawal" which is the daily mean flow computed by subtracting the daily mean inflow into Folsom Lake from the sum of (i) Nimbus Dam releases to the American River, (ii) Nimbus Dam diversions to Folsom South Canal, and (iii) measured water deliveries from Folsom Lake and Nimbus Lake.

(e) "State storage withdrawal" is the value calculated in 3(e)(1) except when specifically declared by the State that Upper Feather storage withdrawals are being made in which case "State storage withdrawal" is the sum of 3(e)(1) and (2).

(1) "Oroville Complex storage withdrawal" is the positive daily mean flow computed by subtracting the sum of the daily mean inflow into Lake Oroville and the daily mean discharge from Kelly Ridge Powerplant from the sum of the daily mean diversions at or into the following facilities:

Palermo Canal, Thermalito Diversion Dam to Feather River, Thermalito Diversion Dam to Hatchery, Diversion Structures for Butte County, Thermalito Irrigation District Diversion Structure, Richvale Canal, Western Canal, Pacific Gas and Electric Company's Lateral, Sutter Butte Canal, and the Thermalito Afterbay Outlet to Feather River.

(2) "Upper Feather River storage withdrawal" is the positive daily mean flow computed by subtracting the sum of the daily mean flow into Lake Davis and Antelope Reservoir from the sum of the daily mean releases from these reservoirs.

(f) "Export" means diversions by the United States and the State through export facilities specified in subarticle 5(b).

(g) "United States stored water" is the net increase in daily storage in Shasta Lake and Folsom Lake.

(h) "State stored water" is the net increase in daily storage in Lake Oroville and, when declared by the State, the net increase in daily storage in the Upper Feather River reservoirs.

(i) "Delta" means the Sacramento-San Joaquin Delta as described in California Water Code §12220 (Stats. 1959, C. 1766, p. 4249, § 1).

(j) "New Delta standards" are any Delta standards different from those set forth in Exhibit A.

TERM OF AGREEMENT

4. This agreement shall remain in full force and effect until terminated either by the mutual consent of the parties or as provided in subarticles 10(h), or 14(b).

FACILITIES

5. This agreement recognizes the following facilities as presently existing:

(a) Reservoirs:

United States	State
Shasta Lake	Lake Oroville
Keswick Reservoir	Thermalito Forebay
Clair Engle Lake	Thermalito Afterbay
Lewiston Lake	Thermalito Diversion Dam Reservoir
Whiskeytown Lake	San Luis Reservoir (Joint)
Folsom Lake	O'Neill Forebay (Joint)
Lake Natoma	Lake Davis
San Luis Reservoir (Joint)	Antelope Lake
O'Neill Forebay (Joint)	Lake Del Valle
	Pyramid Lake
	Castaic Lake
	Silverwood Lake
	Lake Perris
Millerton Lake	
New Melones	

(b) Export facilities:

United States	State
Contra Costa Pumping Plant #1	Harvey O. Banks Delta Pumping Plant, including Clifton Court Forebay
Tracy Pumping Plant	

COORDINATION OF OPERATIONS

6. (a) This agreement was negotiated on the basis of annual supplies reflected in Exhibit B. It is agreed that:

(1) The computations described in this article shall be the basis upon which the United States and the State shall coordinate the operations of the Central Valley Project and the State Water Project facilities specified in Article 5 in order to meet Sacramento Valley inbasin uses and maintain the respective annual water supplies specified in Exhibit B-1, or as that exhibit is revised in accordance with subarticle 6(a)(3);

(2) Nothing in this agreement shall constrain either party from moving toward full utilization of its facilities at any time;

(3) As either party proceeds toward the full utilization of its project, any changes in the underlying assumptions with respect to the development of the two projects and the demands for water from each project will be reflected by recomputing the annual water supplies specified

in Exhibits B-1 and B-2 in accordance with the provisions of subarticle 14(a). The methodology described in the document entitled "Technical Report on Determination of Annual Water Supplies for Central Valley Project and State Water Project," dated March 1984 will be used to recompute the annual water supplies and to revise, if necessary, the factors and procedures contained in this article.

(b) Determination of Sacramento Valley Inbasin Use of Storage Withdrawals and Unstored Water for Export: During period of balanced water conditions, daily computation shall be made to determine the difference between (i) the sum of the United States and State storage withdrawals adjusted for time of travel to the export facilities specified in subarticle 5(b), and (ii) the sum of the United States and State exports. If total storage withdrawals exceed total exports, the difference represents Sacramento Valley inbasin use of storage withdrawals. If total exports exceed storage withdrawals, the difference represents unstored water for export.

(c) Sharing of Responsibility for Meeting Sacramento Valley Inbasin use With Storage Withdrawals During Balanced Water Conditions: Each party's responsibility for making available storage withdrawals to meet Sacramento Valley

inbasin use of storage withdrawals shall be determined by multiplying the total Sacramento Valley inbasin use of storage withdrawals by the following percentages:

United States	State
75	25

(d) Sharing of Responsibility During Balanced Water Conditions When Unstored Water for Export is Available: Each party's responsibility to meet Sacramento Valley inbasin use and exports shall be determined by:

(1) Allocating the sum of United States stored water, State stored water and the unstored water for export by the following percentages:

United States	State
55	45

(2) If the daily sum of United States stored water and unstored water for export is greater than the United States share as allocated in 6(d)(1), then the United States is obligated, except when either subarticle 6(h) or 6(i) is in effect, to provide water to the extent that its daily sum is greater than its allocated share.

(3) If the daily sum of United States stored water and the unstored water for export is less than its share as allocated in 6(d)(1) then the State is obligated, except when either subarticle 6(h) or 6(i) is in effect, to

provide water to the extent that the State's daily sum of State stored water and unstored water used for export is greater than its allocated share.

(e) Accounting of Accumulated Responsibilities: During balanced conditions, except when either subarticle 6(h) or 6(i) is in effect, the daily obligation as defined in subarticle 6(c) or 6(d) shall be accumulated. The accumulation in effect when balanced conditions end shall remain in force and resume when balanced conditions are again declared. At the request of either party, the accumulation will be reduced or eliminated within a reasonable time. Otherwise, the accumulation shall continue until the agency that has the positive accumulation (has released more water than its defined responsibility) goes into a flood control operation. A flood control operation occurs when the actual storage exceeds the defined flood control permissible storage at Oroville Reservoir for the State or Shasta Reservoir for the United States. The flood control operation at Folsom Reservoir will not affect this provision because of its limited conservation storage.

(f) Changes in Sacramento Valley Inbasin Use During Balanced Conditions: If the Sacramento Valley inbasin use changes, upstream reservoir releases and/or exports will be modified based on the current accumulation identified in subarticle 6(e) and/or the daily share of responsibility computed in subarticles 6(c) and 6(d).

(g) Responsibilities During Excess Water Conditions: During excess water conditions each party has the responsibility to export and store as much water as possible within its physical and contractual limits.

(h) Availability of Storage Withdrawals to the Other Party: Unless otherwise agreed, whenever a party's storage withdrawal available for export is greater than its export capability, the difference shall be available for export by the other party without affecting either party's future responsibility for providing storage withdrawals to meet Sacramento Valley inbasin use.

(i) Availability of Unstored Water for Export to the Other Party: Unless otherwise agreed, whenever a party's share of unstored water for export exceeds its exports, the unusable portion is available for export by the other party without affecting either party's daily sum of stored water.

FORECASTING

7. Upon request, each party shall prepare and furnish to the other a forecast of its proposed operation related to the facilities specified in Article 5. The forecast shall indicate the flow available for export, storage withdrawals, and Sacramento Valley inbasin use. The forecasts shall be prepared and exchanged so as to allow sufficient time for the preparation of consolidated forecasts.

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WATER MEASUREMENT RESPONSIBILITIES

8. The United States and the State, each at its own expense, shall install and maintain measuring and recording devices at its facilities specified in Article 5.

(a) Each party shall measure or compute and record daily, or at such other intervals as may be agreed upon, and provide to the other party the rates and quantities of water that will show the (1) estimated inflow to its reservoirs, (2) net releases from its reservoirs, (3) stage and change in storage of its reservoirs, (4) net amount of evaporation at its reservoirs, (5) diversions through its export facilities, and (6) its storage withdrawals.

(b) The measuring and recording devices shall be examined, tested, and serviced regularly to assure their accuracy. At any reasonable time either party may inspect the measuring and recording devices of the other party. Immediate action shall be taken to correct any deficiencies noted in such inspections. Accuracy in measurements of export diversions and releases from reservoirs shall be within commonly accepted engineering standards. All computations and correlations shall be calculated in a manner acceptable to both parties.

REDUCTION IN UNITED STATES AND STATE EXPORTS

9. If any forecast indicates that either the United States or the State, or both, will be unable to meet the anticipated demands of its water users during the balance of

the calendar year, representatives of the United States and the State shall confer on possible procedures for making joint operational changes to minimize the shortage. If agreement cannot be reached on a joint procedure for minimizing the threatened shortage, the United States and the State each shall be entitled to export the amount of water available to it according to calculations made pursuant to Article 6, and each party shall assess against its users such reductions as it deems necessary or appropriate.

EXCHANGES, CONVEYANCE, AND PURCHASES OF WATER SUPPLY

10. (a) Either party may make use of its facilities available to the other party for pumping and conveyance of water by written agreement.

(b) To the extent that operational constraints are imposed on the Central Valley Project by Exhibit A to minimize diversions of young striped bass from the Delta during May and June, which reduce Central Valley Project exports, the State will transport up to 195,000 acre-feet of Central Valley Project water through the California Aqueduct Reaches 1, 2A, and 2B no later than April 30 of the following year by direct diversion or by rediversion of stored Central Valley Project water at times that diversions do not reduce State Water Project yield.

~~The State~~ agrees to transport this water subject to the following:

(1) The United States will supply power according to Exhibit D;

(2) During critical water supply years, as defined by D-1485, the State shall pump the water during Central Valley Project off-peak hours (10:01 p.m. to 6:59 a.m. Monday through Saturday and all day Sunday and national holidays);

(3) In all other water supply years, to the extent possible as determined by the State, pumping of this water shall be provided during Central Valley Project off-peak hours;

(4) The United States shall reimburse the State for incremental costs for pumping Central Valley Project water through the facilities specified in this subarticle. Incremental costs are those costs which if not reimbursed by the United States would otherwise cause increased charges to State Water Project water contractors over what they would have been charged if the State had not conveyed Central Valley Project water pursuant to this agreement, provided that the United States shall not be responsible for payment for any additional power demand charges that may result from pumping Central Valley Project water pursuant to subarticle 10(b). At present, the only incremental costs identified by the State are the replacement portions of the minimum and variable components of both the Delta Water Charge and Transportation Charge, as defined in

the November 4, 1960, State Water Supply Contract with The Metropolitan Water District of Southern California, as it now exists and may hereafter be amended. Incremental costs in 1985 amounted to $0.21 per acre-foot of water conveyed.

(c) The State agrees to give priority to the United States to convey Central Valley Project water for scheduled or unscheduled maintenance and unforeseen outages of the Central Valley Project, from the Delta to O'Neill Forebay, not covered in subarticles 10(b) and 10(d), through the California Aqueduct Reaches 1, 2A, and 2B facilities at times that such conveyance does not reduce use of the State's facilities for the benefit of the State's long-term water supply contractors subject to the following:

(1) The United States will supply the power required to pump Central Valley Project water through the Harvey O. Banks Delta Pumping Plant;

(2) The State will be reimbursed for each of the following charges expressed as a unit rate and applied to each acre-foot of water conveyed. These charges will equal the sum of the components of the water charges for California Aqueduct Reaches 1, 2A, and 2B as defined in the State Water Supply Contract with the Metropolitan Water District of Southern California, dated November 4, 1960, as it now exists and may hereafter be amended.

(i) The capital component of the transportation charge.

(ii) The minimum component of the transportation charge.

(iii) The replacement portion of the variable component of the transportation charge.

(iv) The capital component of the Delta water charge.

(v) The minimum component of the Delta water charge.

These charges for 1985 total $8.44 per acre-foot of water conveyed.

(d) In consideration for the conveyance of State Water Project water for scheduled or unscheduled maintenance and unforeseen outages from the Delta to O'Neill Forebay through Central Valley Project facilities, the State will convey for the United States an equal quantity of Central Valley Project water measured in acre-feet through its facilities at no charge; Provided, that such conveyance of Central Valley Project water shall be accomplished, if possible, within 12 months from the date conveyance of State Water Project water was completed. Each agency shall be responsible for supplying the power required to pump its water.

(e) The State, in an annual letter to the United States, will transmit the charges referred to in subarticles 10(b)(2) and 10(c)(2) above based upon the cost components listed therein.

(f) The State will submit invoices to the United States on or before June 30 of the year following the year in which the wheeling occurs. The United States will make payment within 30 days after receipt of such invoice.

(g) Prior to December 31 of the fifth full year following the execution of this agreement, the parties will agree upon the amount and value of the services each project has provided to the other project prior to the execution of this agreement and will agree upon the manner in which any imbalance is to be resolved. This subarticle shall not apply to services provided under a separate written agreement.

(h) (1) The parties shall promptly commence negotiating a contract for the conveyance and purchase of Central Valley Project water to assist each party in making more efficient use of the water project facilities and water supplies contemplated in this agreement. The terms and conditions of said contract shall be no less favorable to either party than the terms and conditions either party would make available to their respective long-term contractors, except as specified by this subarticle.

(2) The contract referred to in subarticle 10(h)(1) shall provide for, among other things, the sale of Central Valley Project water to the State for use by State Water Project contractors on the following conditions:

(i) When the Central Valley Project water sold to the State is needed by existing or new long-term Central Valley Project contractors, it shall be recalled by the United States for such contractors;

(ii) The United States shall impose deficiencies on water purchased by the State in a manner consistent with Exhibit E.

(3) The contract referred to in subarticle 10(h)(1) shall further provide for, among other things, the United States purchase of State Water Project conveyance services for transport of Central Valley Project water to Central Valley Project contractors on the following conditions:

(i) The State shall transport Central Valley Project water for the United States up to the amount of Central Valley Project water made available to the State for purchase each year on the same priority as water transported for State Water Project long-term contractors;

(ii) In addition, the United States shall have the first right to purchase all conveyance services that are in excess of the services being used to transport water

developed or purchased by the State or the State Water Project contractors. The conveyance of Central Valley Project water shall not diminish deliveries or increase costs of water supplies developed or purchased by the State or the State Water Project contractors.

(4) The parties recognize that to fully implement this agreement, the parties may be required to seek amendments to existing water rights permits or additional water rights permits for, (i) an additional point of diversion and rediversion at the State's Harvey O. Banks Delta Pumping Plant and the United States Tracy Pumping Plant; and (ii) consolidation and expansion of place of use. The State shall support the petition of the United States.

(5) At any time after December 31, 1988, if either party shall not have received all of the amendments or permits described in subarticle 10(h)(4) and which contain conditions satisfactory to that party, then that party may terminate this agreement on 180 days written notice, or utilize the provisions of subarticle 14(b)(2) to seek a resolution of its concerns.

DELTA STANDARDS

11. (a) The Central Valley Project and the State Water Project will be operated in conformity with the Delta standards in Exhibit A. Should the State Water Resources

Control Board establish new Delta standards, and the United States determines that operation of the Central Valley Project in conformity with the new Delta standards is not inconsistent with Congressional directives the parties shall amend Exhibit A to conform with the new Delta standards and amend this agreement to the extent necessary to provide for continued operation of both projects to accomplish the purposes of this agreement.

(b) Should the United States determine that the new Delta standards are inconsistent with Congressional directives then the United States shall promptly request the Department of Justice to bring an action for the purpose of determining the applicability of the new Delta standards to the Central Valley Project.

(c) The United States reserves the right to seek, at any time, the enactment of legislation regarding the operation of the Central Valley Project, including compliance with new Delta standards, which may supersede any final court decisions addressed in subarticle 11(b).

(d) The parties do not intend by this agreement to confer any additional authority upon either the Secretary of the Interior or the State Water Resources Control Board beyond that derived from applicable statutory and decisional law.

MONITORING

12. (a) The United States and the State recognize that certain monitoring activities must be done to ensure compliance with the Delta standards specified in Exhibit A. The necessary monitoring activities are specified in Exhibit C. The United States and the State agree to share equally the cost of those monitoring activities, including the analysis of the collected data.

(b) Exhibit C will be amended, if necessary, to ensure compliance with any Delta standards different from those set forth in Exhibit A which are applicable to the United States pursuant to Article 11.

(c) The parties agree that additional data must be collected and processed to determine the effects of the projects on the Delta and San Francisco Bay. Monitoring in addition to that specified in Exhibit C and the performance of Delta water quality studies will be covered by separate agreements.

RECORDS

13. Subject to applicable laws and regulations, the United States and the State shall have full access at all reasonable times to the books and records of the other party insofar as they pertain to this agreement, with the right to make copies thereof.

PERIODIC REVIEW

14. (a) Prior to December 31 of the fifth full year following execution of this agreement, and before December 31 of each fifth year thereafter, or more frequently if so requested by either party, the United States and the State jointly shall review the operations of both projects. The parties shall (1) compare the relative success which each party has had in meeting its objectives, (2) review operation studies supporting this agreement, including, but not limited to, the assumptions contained therein, and (3) assess the influence of the factors and procedures of Article 6 in meeting each party's future objectives. The parties shall agree upon revisions, if any, of the factors and procedures in Article 6, Exhibits B and D, and the Operation Study used to develop Exhibit B.

(b) (1) If the parties fail to enter into the contract referred to in subarticle 10(h)(1) by December 31, 1988, either party may give written Notice of Negotiation to the other party. Within 30 days of such notice, each party shall designate one member of an Advisory Board to which that problem shall be referred. The members designated by the parties shall choose a third member who shall act as chairperson. The Board shall report its unanimous recommendation to both parties with respect to all terms and conditions to be

included in said contract at a date not later than 12 months from the date of the Notice of Negotiation. The parties shall immediately implement that recommendation. If the Board fails to made a unanimous recommendation within the 12-month period, either party may unilaterally terminate this agreement.

(2) If the parties are unable to agree on changes to this agreement, or either party fails to receive all of the amendments or permits described in Article 10(h)(4), either party may give written Notice of Negotiation. If agreement satisfactory to both parties has not been reached within 12 months of such Notice, each party shall designate within 30 days one member of an Advisory Board to which the problem shall be referred. The members designated by the parties shall choose a third member who shall act as chairperson. The Board shall report its unanimous recommendations to both parties at a date not later than 24 months from the date of the Notice of Negotiation and the parties shall amend this agreement and immediately begin to operate in accordance with said recommendations. If the Board fails to make unanimous recommendations within the 24-month period, either party may unilaterally terminate this agreement.

RELATION TO AGREEMENT OF MAY 16, 1960

15. This agreement suspends the Agreement of May 16, 1960, and said Agreement of May 16, 1960, shall be of no force and effect whatsoever so long as this agreement remains in force. Should this agreement be terminated for any purpose, the Agreement of May 16, 1960, shall automatically become effective with both parties reserving their respective rights regarding the interpretation of the provisions thereof.

NEW FACILITIES

16. Any yield created by the construction of a new facility (not presently existing) by either party shall be attributed to the party constructing the new facility, and will require a review as provided for in Article 14. To the extent that water is exported outside the drainage of the Sacramento, Mokelumne, and Calaveras Rivers, the facilities used to convey such water shall be considered as export facilities for the purposes of Article 5.

PROJECT SERVICE AREAS

17. The State and the United States agree that they will respect each others project service areas as defined by long-term contracts of either agency for the furnishing of water.

THIRD PARTY RIGHTS UNAFFECTED

18. Nothing in this agreement is intended to define, determine, limit, or affect the rights of third parties.

EFFECT OF WAIVER OF BREACH

19. The waiver of a breach of any of the provisions of this agreement shall not be deemed to be a waiver of any other provisions hereof or of a subsequent breach of such provisions.

EQUAL EMPLOYMENT OPPORTUNITIES

20. During the performance of this agreement, the State agrees as follows:

(a) It will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. It will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to, the following: Employment,

upgrading, demotion, or transfer; recruiting or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. It agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Contracting Officer setting forth the provisions of this Equal Opportunity clause.

(b) The State will, in all solicitations or advertisements for employees placed by or on its behalf, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.

(c) The State will send to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding a notice, to be provided by the agency Contracting Officer, advising the labor union or workers' representative of the State's commitments under this Equal Oportunity clause, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(d) The State will comply with all provisions of Executive Order No. 11246 of September 24, 1965, as amended, and of the rules, regulations, and relevant orders of the Secretary of Labor.

(e) The State will furnish all information and reports required by said Executive Order, and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to its books, records, and accounts by the Bureau of Reclamation and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(f) In the event of the State's noncompliance with the Equal Opportunity clause of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part, and it may be declared ineligible for further Government contracts in accordance with procedures authorized in said Executive Order, and such other sanctions may be imposed and remedies invoked as provided in said Executive Order, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(g) The State will include the provisions of paragraphs (a) through (g) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order No. 11246, so that such provisions will be binding upon each subcontractor or vendor. It will take such actions with respect to any subcontract or purchase order as the Contractin

Officer may direct as a means of enforcing such provisions, including sanctions for noncompliance; Provided, however, That in the event the State becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the Contracting Officer it may request the United States to enter into such litigation to protect the interests of the United States.

CONTINGENT PROVISIONS

21. Performance by the State and the United States shall be contingent on: (1) the availability of Federal funds therefor; and (2) the availability of State funds therefor.

OFFICIALS NOT TO BENEFIT

22. (a) No member of or Delegate to Congress or Resident Commissioner shall be admitted to any share or part of this agreement or to any benefit that may arise herefrom. This restriction shall not be construed to extend to this agreement if made with a corporation for its general benefit.

(b) No official of the State shall receive any benefit that may arise by reason of this agreement other than as a landowner within the Project and in the same manner as other landowners within the Project.

IN WITNESS WHEREOF, the parties hereto, by their respective officers thereunto duly authorized, have duly executed this supplement on the day and year first herein-above written.

THE UNITED STATES OF AMERICA

By _____
Regional Director, Mid-Pacific Region
Bureau of Reclamation

DEPARTMENT OF WATER RESOURSES OF
THE STATE OF CALIFORNIA

By _____
Director
Department of Water Resources

STANDARDS
FOR THE SACRAMENTO-SAN JOAQUIN DELTA 1/

BENEFICIAL USES PROTECTED AND LOCATION	PARAMETER	DESCRIPTION	YEAR TYPE	VALUES	
MUNICIPAL AND INDUSTRIAL					
Contra Costa Canal Intake at Pumping Plant No. 1	Chloride	Maximum Mean Daily Cl in mg/l	All	250	
Contra Costa Canal Intake At Pumping Plant No. 1 or Antioch Water Works Intake on San Joaquin River	Chloride	Maximum Mean Daily 150 mg/l Chloride for at least the number of days shown during the Calendar Year. Must be provided in intervals of not less than two weeks duration (% of Year shown in parenthesis)		Number of Days Each Calendar Year Less than 150 mg/l Chloride	
			Wet	240 (66%)	
			Ab. Normal	190 (52%)	
			Bl. Normal	175 (48%)	
			Dry	165 (45%)	
			Critical	155 (42%)	
City of Vallejo Intake at Cache Slough	Chloride	Maximum Mean Daily Cl^- in mg/l	All	250	
Clifton Court Forebay Intake at West Canal	Chloride	Maximum Mean Daily Cl^- in mg/l	All	250	
Delta Mendota Canal at Tracy Pumping Plant	Chloride	Maximum Mean Daily Cl^- in mg/l	All	250	
AGRICULTURE					
WESTERN DELTA				0.45 EC April 1 to Date Shown	EC from Date Shown 2/ to Aug. 15
Emmaton on the Sacramento River	Electrical Conductivity	Maximum 14-day Running Average of Mean Daily EC in mmhos	Wet	Aug. 15	—
			Ab. Normal	July 1	0.63
			Bl. Normal	June 20	1.14
			Dry	June 15	1.67
			Critical	—	2.70

BENEFICIAL USES PROTECTED AND LOCATION	PARAMETER	DESCRIPTION	YEAR TYPE	VALUES	
				0.45 EC April 1 to Date Shown	EC from Date Shown 2/ to Aug. 15
AGRICULTURE					
WESTERN DELTA					
Jersey Point on the San Joaquin River	Electrical Conductivity	Maximum 14-day Running Average of Mean Daily EC in mmhos	Wet	Aug. 15	—
			Ab. Normal	Aug. 15	—
			Bl. Normal	June 20	0.74
			Dry	June 15	1.35
			Critical	—	2.20
INTERIOR DELTA					
Terminous on the Mokelumne River	Electrical Conductivity	Maximum 14-day Running Average of Mean Daily EC in mmhos	Wet	Aug. 15	—
			Ab. Normal	Aug. 15	—
			Bl. Normal	Aug. 15	—
			Dry	Aug. 15	—
			Critical	—	0.54
San Andreas Landing on the San Joaquin River	Electical Conductivity	Maximum 14-day Running Average of Mean Daily EC in mmhos	Wet	Aug. 15	—
			Ab. Normal	Aug. 15	—
			Bl. Normal	Aug. 15	—
			Dry	June 25	0.58
			Critical	—	0.87
FISH AND WILDLIFE					
STRIPED BASS SPAWNING					
Prisoners Point on the San Joaquin River	Electrical Conductivity	Average of mean daily EC for the period not to exceed	All	April 1 to May 5 0.55 mmhos	
Chipps Island	Delta Outflow Index in cfs	Average of the daily Delta outflow index for the period, not less than	All.	April 1 to April 14 6700 cfs	
Antioch Waterworks Intake on the San Joaquin River	Electrical Conductivity	Average of mean daily EC for the period, not more than	All	April 15 to May 5 1.5 mmhos	

BENEFICIAL USES PROTECTED AND LOCATION	PARAMETER	DESCRIPTION	YEAR TYPE	VALUES
FISH AND WILDLIFE				
STRIPED BASS SPAWNING				
Antioch Water Works Intake (continued)	Electical Conductivity (Relaxation Provision - replaces the above Antioch and Chipps Island Standard whenever the projects impose deficiencies in firm supplies. 3/	Average of mean Daily EC for the period, not more than the values corresponding to the deficiencies taken (linear interpolation to be used to determine values between those shown)	All - whenever the projects impose deficiencies in firm supplies 3/	Total Annual Imposed Deficiency MAF / Apr. 1 to May EC in mmhos 0 — 1.5 0.5 — 1.9 1.0 — 2.5 1.5 — 3.4 2.0 — 4.4 3.0 — 10.3 4.0 or more — 25.2
STRIPED BASS SURVIVAL				
Chipps Island	Delta Outflow Index in cfs	Average of the daily Delta outflow index for each period shown not less than	Wet	May 6-31: 14,000; June: 14,000; July: 10,000
			Ab. Normal	14,000; 10,700; 7,700
			Bl. Normal	11,400; 9,500; 6,500
			Subnormal Snowmelt	6,500; 5,400; 3,600
			Dry 4/	4,300; 3,600; 3,200
			Dry 5/ or Critical	3,300; 3,100; 2,900
SALMON MIGRATIONS				
Rio Vista on the Sacramento River	Computed net stream flow in cfs	Minimum 30-day running average of mean daily net flow		Jan. / Feb. 1-Mar. 15 / Mar. 16-June 30
			Wet	2,500; 3,000; 5,000
			Ab. Normal	2,500; 2,000; 3,000
			Bl. Normal	2,500; 2,000; 3,000
			Dry or Critical	1,500; 1,000; 2,000

BENEFICIAL USES PROTECTED AND LOCATION	PARAMETER	DESCRIPTION	YEAR TYPE	VALUES		
FISH AND WILDLIFE						
SALMON MIGRATIONS						
Rio Vista on the Sacramento River (continued)				July	Aug.	Sept. 1 Dec. 31
			Wet	3,000	1,000	5,000
			Ab. Normal	2,000	1,000	2,500
			Bl. Normal	2,000	1,000	2,500
			Dry or Critical	1,000	1,000	1,500
SUISUN MARSH						
Chipps Island at O&A Ferry Landing	Electrical Conductivity	Maximum 28-day running average of mean daily EC		Jan.-May		Oct.-Dec.
			Wet	12.5 mmhos		12.5 mmhos
			Ab. Normal	12.5 mmhos		12.5 mmhos
			Bl. Normal	12.5 mmhos		12.5 mmhos
			Dry or Critical	12.5 mmhos		15.6 mmhos
		(The 15.6 mmhos EC Standard applies only when project water users are taking deficiencies in scheduled water supplies 6/ otherwise the 12.5 mmhos EC remains in effect.)				
Chipps Island	Delta Outflow Index in cfs	Average of the daily Delta outflow index for each month, not less than values shown	Wet	February-May 10,000 cfs		
			Subnormal Snowmelt	February-April 10,000 cfs		
		Minimum daily Delta outflow index for 60 consecutive days in the period	Ab. Norm and Bl. Norm.	January-April 12,000 cfs		

BENEFICIAL USES PROTECTED AND LOCATION	PARAMETER	DESCRIPTION	YEAR TYPE	VALUES
FISH AND WILDLIFE				
SUISUN MARSH				
Chipps Island (continued)	Delta Outflow Index in cfs	Average of the daily Delta outflow index for each month, not less than values shown	All (if greater flow not required by above standard) - whenever storage is at or above the minimum level in the flood control reservation envelope at two out of three of the following: Shasta Reservoir, Oroville Reservoir, and CVP storage on the American River	Jan.-May 6,600 cfs
OPERATIONAL CONSTRAINTS *				
Minimize diversion of young striped bass from the Delta	Diversions in cfs	The mean monthly diversions from the Delta by the State Water Project (SWP) (Department) not to exceed the values shown.	All	May 3,000 / June 3,000 / July 4,600
		The mean monthly diversions from the Delta by the Central Valley Project (CVP) (Bureau), not to exceed the values shown.	All	May 3,000 / June 3,000
Minimize diversion of young striped bass into Central Delta		Closure of Delta cross channel gates for up to 20 days but no more than two out of four consecutive days at the discretion of the Department of Fish and Game upon 12	All - whenever the daily Delta outflow index is greater than 12,000 cfs	April 16-May 31

BENEFICIAL USES PROTECTED AND LOCATION	PARAMETER	DESCRIPTION	YEAR TYPE	VALUES
FISH AND WILDLIFE				
OPERATIONAL CONSTRAINTS *				
Minimize cross Delta movement of Salmon		Closure of Delta Cross Channel gates (whenever the daily Delta outflow index is greater than 12,000 cfs)	All	Jan 1-April 15

*To the extent that operational constraints on the Central Valley Project to minimize diversion of young striped bass from the Delta during May and June reduce Central Valley Project exports, the State will, through coordinated operations, transport for the United States an amount equal to such reductions during the year by direct diversion or by rediversion of stored Central Valley Project water through State Water Project facilities at such times that diversions don't reduce State Water Project yield.

FOOTNOTES

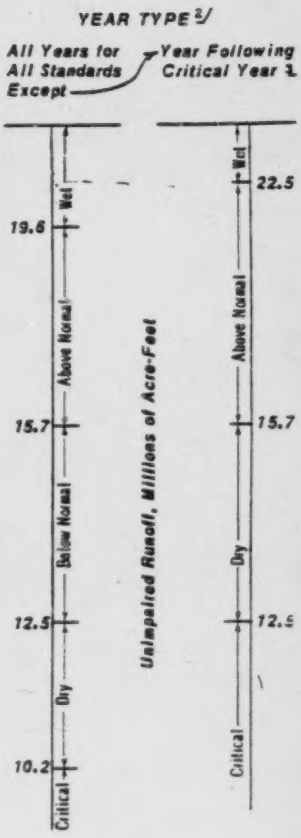
1/ Except for flow, all values are for surface zone measurements. Except for flow, all mean daily values are based on at least hourly measurements. All dates are inclusive.
2/ When no date is shown in the adjacent column, EC limit in this column begins on April 1.
3/ For the purpose of this provision firm supplies of the Bureau shall be any water the Bureau is legally obligated to deliver under any CVP contract of 10 years or more duration, excluding the Friant Division of the CVP, subject only to dry and critical year deficiencies. Firm supplies of the Department shall be any water the Department would have delivered under Table A entitlements of water supply contracts and under prior right settlements had deficiencies not been imposed in that dry or critical year.
4/ Dry year following a wet, above normal or below normal year.
5/ Dry year following a dry or critical year.
6/ Scheduled water supplies shall be firm supplies for USBR and DWR plus additional water ordered from DWR by a contractor the previous September, and which does not exceed the ultimate annual entitlement for said contractor.

NOTE: EC values are mmhos/cm at 25°C.

YEAR CLASSIFICATION

Year classification shall be determined by the forecast of Sacramento Valley unimpaired runoff for the current water year *(October 1 of the preceding calendar year through September 30 of the current calendar year)* as published in California Department of Water Resources Bulletin 120 for the sum of the following locations: Sacramento River above Bend Bridge, near Red Bluff; Feather River, total inflow to Oroville Reservoir; Yuba River at Smartville; American River, total inflow to Folsom Reservoir. Preliminary determinations of year classification shall be made in February, March and April with final determination in May. These preliminary determinations shall be based on hydrologic conditions to date plus forecasts of future runoff assuming normal precipitation for the remainder of the water year.

YEAR TYPE	*RUNOFF, MILLIONS OF ACRE-FEET*
Wet 1/	equal to or greater than 19.6 (except equal to or greater than 22.5 in a year following a critical year). 3/
Above Normal 1/	greater than 15.7 and less than 19.6 (except greater than 15.7 and less than 22.5 in a year following a critical year).3/
Below Normal 1/	equal to or less than 15.7 and greater than 12.5 (except in a year following a critical year).3/
Dry	equal to or less than 12.5 and greater than 10.2 (except equal to or less than 15.7 and greater than 12.5 in a year following a critical year).3/
Critical	equal to or less than 10.2 (except equal to or less than 12.5 in a year following a critical year).3/



1/ *Any otherwise wet, above normal, or below normal year may be designated a subnormal snowmelt year whenever the forecast of April through July unimpaired runoff reported in the May issue of Bulletin 120 is less than 5.9 million acre-feet.*

2/ *The year type for the preceding water year will remain in effect until the initial forecast of unimpaired runoff for the current water year is available.*

3/ *"Year following critical year" classification does not apply to Agricultural, Municipal and Industrial standards.*

EXHIBIT B-1

CENTRAL VALLEY PROJECT AND STATE WATER PROJECT ANNUAL SUPPLIES
(all figures are in thousands of acre-feet)

	Central Valley Project	State Water Project		Total
SACRAMENTO BASIN USE				
Sacramento River below Shasta	2,954	Feather River below Oroville	993	
American River Basin	200			
Subtotal	3,154		993	4,147
EXPORT				
Tracy Pumping Plant	3,113	Delta Pumping Plant	2,674	
Contra Costa Pumping Plant	90			
Cross Valley Canal	128			
Incremental Supply	432			
Subtotal	3,762		2,674	6,436
DELTA AREA AND OUTFLOW (JOINT RESPONSIBILITY)				4,986
		TOTAL		15,569

Notes: (1) Annual supplies are based on operation study USCAL-2-82. (1928-1934 critical period)

(2) Annual supplies in some cases include both water right entitlements and project supplemental water.

(3) The listing of annual supplies by service areas is not intended to restrict the place of use of either party.

(4) Cross Valley Canal supply relies on transport through State Water Project facilities.

(5) Incremental supply is developed from remaining storage in Central Valley Project reservoirs at the end of the 1928-1931 critical period and could be made available in the Delta on a firm basis with allowable (25%) deficiencies in critical years. It would require transport through State Water Project facilities.

CENTRAL VALLEY PROJECT AND STATE WATER PROJECT FULL DEVELOPMENT ANNUAL SUPPLIES
(all figures are in thousands of acre-feet)

	Central Valley Project	State Water Project		Total
SACRAMENTO BASIN USE				
Sacramento River below Shasta	3,381	Feather River below Oroville	1,031	
American River Basin	1,132			
Subtotal	4,513		1,031	5,544
EXPORT				
Tracy Pumping Plant	3,264	Delta Pumping Plant	2,039	
Contra Costa Pumping Plant	195			
Cross Valley Canal	128			
Incremental Supply	154			
Subtotal	3,741		2,039	5,800
DELTA AREA AND OUTFLOW (JOINT RESPONSIBILITY)				4,918
	TOTAL			16,262

Notes: (1) Figures are illustrative of annual supplies obtainable under the assumptions of operation study USCAL-3-82 (1928-1934 critical period) which assumes full development with existing facilities.

(2) Annual supplies in some cases include both water right entitlements and project supplemental water.

(3) The listing of annual supplies by service areas is not intended to restrict the place of use of either party.

(4) Cross Valley Canal supply relies on transport through State Water Project facilities.

(5) Incremental supply is developed from remaining storage in Central Valley Project reservoirs at the end of the 1928-1934 critical period and could be made available in the Delta on a firm basis with allowable (25%) deficiencies in critical years. It would require transport through State Water Project facilities.

(6) American River Basin Supply includes 120 thousand acre-feet for Placer County Water Agency water rights. It is assumed delivered above Folsom.

EXHIBIT C

MONITORING LOCATIONS

No.	*Station Identifier Code	State Location
1	RSAN032	San Joaquin River at San Andreas Landing
2	CHCCC06	Contra Costa Canal at P.P. #1
3	CHWST0	West Canal at mouth/intake to CCFB
4	RSMKL08	Mokelumne River at Terminous
5	SLCCH16	Cache Slough at City of Vallejo intake
6	RSAC075	Sacramento River at Chipps Island (Mallard Slough)
7	RSAN007	San Joaquin River at Antioch
8	RSAN018	San Joaquin River at Jersey Point
9	RSAC092	Sacramento River at Emmaton
10	CHDMC006	Delta Mendota Canal
11	RSAC101	Sacramento River at Rio Vista
12	RSAC139	Sacramento River at Greens Landing
13	ROLD14	Old River at Holland Tract
14	RSAC081	Sacramento River at Collinsville
15	RSAN112	San Joaquin River at Vernalis
16	B9D801.9 143.2	San Joaquin River at Blind Point
17	**D29	San Joaquin River at Prisoners Point
18	B9D802.0 137.2	Piper Slough at Bethel Island

Unless otherwise agreed, a continuous electrical conductivity (EC) recorder shall be maintained at all of the sites listed above except for the San Joaquin River at Prisoners Point (D29) where only a weekly EC measurement is required between April 1 and May 5 of each year.

*Station Identifier Code used in the Environmental Protection Agency STORET data base.

**Bureau of Reclamation station identifier code. STORET code not available.

Exhibit D
Exchange Procedure to Provide D-1485 Condition 3
Replacement Water (Article 10b of COA)

The California State Water Resources Control Board (SWRCB) Decision 1485 (D-1485) restricts exports from the Delta by the Central Valley Project (CVP) and the State Water Project (SWP) during May and June of each year by limiting each project to a mean monthly export of 3,000 ft3/s. However, Condition 3 of D-1485[1] allows the CVP to make up any deficiency caused by the limitation by exporting at SWP facilities (Condition 3 water). In an effort to minimize the impact of the limitation on CVP and SWP power operations and unless otherwise agreed, this exchange procedure will be followed.

During May and June of each year the CVP shall have the option to provide and the SWP will accept an amount of energy on a mutually agreed upon schedule sufficient to pump some or all Coudition 3 water at H. O. Banks Delta Pumping Plant (Banks). Operation under this procedure shall not cause export from the Delta in excess of that shown in Exhibit A. Any energy supplied by the CVP under this procedure will be used for pumping of SWP water at Banks and/or any joint CVP-SWP pumping facility during May and June. Such energy shall be converted to dollars at the then current value of SWP energy and credited to a CVP exchange account (account). During months other than May and June, the SWP shall pump Condition 3 water for the CVP utilizing the account to cover

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[1] To the extent that operational constraints on the Central Valley Project to minimize diversion of young striped bass from the Delta during May and June reduce project exports, permittee, the United States Bureau of Reclamation, shall be allowed through coordinated operations to make up such deficiencies during later period of the year by direct diversion or by rediversion of releases of stored water through State Water Project facilities.

the cost of associated pumping energy at Banks at the then current value of energy to the SWP. For accounting purposes all Condition 3 water shall be deemed to have been pumped at Banks at a rate of 297 KWH/AF. This rate is based on the rated efficiency of the pumping plant. Any change in the rated efficiency of the pumping plant will result in a correlative change in this KWH/AF rate at Banks.

The CVP shall have the option to convey all Condition 3 water through SWP facilities during July and August. However, it is recognized that the value of energy is time dependent. Therefore, it is likely that the value of energy to pump an amount of water in May and June will be different than the value for pumping an equal amount of water at other times of the year. Prior to April 1 of each year operators of the SWP shall estimate the value of off-peak and on-peak energy for each week of the following twelve months. Prior to April 20 the CVP operators in coordination with the SWP operators shall determine how much CVP energy can be provided for SWP pumping during the May-June period. In the event that the account balance is insufficient to purchase the necessary energy for pumping all Condition 3 water, the CVP may provide and SWP will accept additional energy needed to effect full recovery of Condition 3 water. In the event that the entire quantity of Condition 3 water is received by the CVP prior to the depletion of the account, the SWP shall credit the CVP with energy for additional pumping at Banks Pumping Plant or any joint CVP-SWP pumping facility until the account reaches a zero balance each year.

EXHIBIT E

WATER SHORTAGE AND APPORTIONMENT

1. (a) In its operation of the Central Valley Project (CVP), the United States will use all reasonable means to guard against a condition of shortage in the quantity of water available to the State pursuant to this contract. Nevertheless, if a shortage does occur during any year because of drought, or other causes which, in the opinion of the Contracting Officer, are beyond the control of the United States, no liability shall accrue against the United States or any of its officers, agents, or employees for any damage, direct or indirect, arising therefrom.

(b) In any year that the Contracting Officer determines there is a shortage in the quantity of water available to customers of the United States from the CVP, the Contracting Officer will apportion available water among the water users capable of receiving water from the same CVP facilities by reducing deliveries to all such water users by the same percentage, unless he is prohibited by existing contracts, CVP authorizatons, or he determines that some other method of apportionment is required to prevent undue hardship. In the event reduced deliveries are necessary, the water supplies for both municipal and industrial use, and agricultural use shall be reduced by the same percentage for each contractor.

(c) If operation of the CVP to meet legally required Delta water quality control standards, including Federally adopted water quality standards, causes a shortage in water supply and requires a reduction in deliveries of water to the State under this agreement, such reductions will be made in accordance with subdivision (b) of this exhibit and shall not be deemed a breach hereof.

SUISUN MARSH PRESERVATION AGREEMENT
Among
United States Bureau of Reclamation
California Department of Water Resources,
California Department of Fish and Game, and
Suisun Resource Conservation District

November 1, 1985

S.Rept. 99-265 O - 86 - 5

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11/1/85

SUISUN MARSH PRESERVATION AGREEMENT
Among
United States Bureau of Reclamation,
California Department of Water Resources,
California Department of Fish and Game, and
Suisun Resource Conservation District

THIS AGREEMENT, dated this _____ day of _____, 1985, is hereby entered into among the United States Bureau of Reclamation (USBR), California Department of Water Resources (DWR), the California Department of Fish and Game (DFG), and the Suisun Resource Conservation District (SRCD), and supersedes that contract for the Initial Facilities dated December 18, 1978.

R E C I T A L S

(a) In Section 29002 of the Public Resources Code, the California Legislature has found and declared that the Suisun Marsh (Marsh) represents a unique and irreplaceable resource to the people of the State and the Nation and that it is the policy of the State to preserve and protect resources of this nature for the enjoyment of the current and succeeding generations. Further, Section 29003 of the Public Resources code provides that in order to preserve the integrity and assure continued wildlife use of the Marsh, including the preservation of its waterfowl carrying capacity and retention of the diversity of its flora and fauna, there is a need for the following:

(1) Provisions for establishment and maintenance of adequate water quality.

(2) Improvement of present water management practices, including drainage and other water control facilities within the Marsh.

(3) Establishment of criteria for the production of valuable waterfowl food plants.

(4) Provisions for future supplemental water supplies and related facilities to assure that adequate water quality will be achieved within the wetland areas.

These concerns have been recognized in the Plan of Protection (Plan) developed by DWR.

(b) Public Law ..... authorizes the USBR to participate in the preservation of the Marsh. The value of preserving wetlands is recognized in Presidential Executive Order 11990 (Protection of Wetlands) dated May 24, 1977.

(c) In Decision 1485 (D-1485) the State Water Resources Control Board (SWRCB) considered the problems of the Marsh and directed the USBR and DWR to develop and implement a plan to protect the Marsh. A Plan of Protection for the Suisun Marsh was furnished to the SWRCB by DWR in February 1984. D-1485 required the Plan's implementation by October 1, 1984. By letter of July 26, 1982, DWR notified SWRCB of its inability to meet that deadline. In the meantime, DWR and USBR are providing partial mitigation through certain Initial Facilities constructed pursuant to Order 7(c) of D-1485 and the contract among SRCD, DFG and DWR dated December 18, 1978. Under a contract between USBR and DWR, dated February 18, 1982, the USBR reimbursed DWR for $2,500,000 of the federal share of the cost of the Initial Facilities, as authorized by Public Law 96-495.

(d) A supply of adequate quality water is necessary to protect wildlife habitat in the Marsh. The parties consider it to be in the public interest to manage the wetlands of the Marsh to produce adequate quality waterfowl habitat and grow certain waterfowl food plants.

(e) Upstream water use, including diversions by the Central Valley Project (CVP) and the State Water Project (SWP) has, at times, reduced outflow from the Delta, thus increasing salinity in the Marsh. The higher salinities have, at times, degraded waterfowl habitat in the Marsh. The Marsh has a salinity gradient between its western portion and its eastern portion, with ocean-derived salinity being greatest in the westerly portion.

(f) The parties recognize that the water quality provided in this Agreement may, at times, be different than the quality of water which would be available in the Marsh in the absence of the SWP, the CVP, and other diversions by upstream users. Consequently, at times, landowners in the Marsh will need to employ more intensive management practices in the production of desirable waterfowl food plants.

(g) Resource conservation districts are authorized to enter into contracts with the United States and the State in furtherance of their powers.

(h) The SRCD is granted the primary local responsibility by Public Resources Code Section 9962 for regulating and improving water management practices on privately owned lands within the primary management area of the Marsh.

(i) The parties recognize that the benefits and costs of implementing the Plan cannot be determined precisely. The division of responsibilities contained herein is deemed to represent a reasonable balance of equities.

A G R E E M E N T

1. Definitions.

When used herein, the term:

(a) "Become(s) Operational" shall mean the time when a facility constructed pursuant to Article 8 is accepted by DWR with the concurrence of USBR in a formal written acceptance issued to the construction contractor.

(b) "Construction Season" shall mean the period February 1, to October 1.

(c) "Control Station" shall mean a location as listed in Table II.

(d) "Deficiency Period" shall mean (1) a Critical Year following a Dry or Critical Year; or (2) a Dry Year following a year in which the Four Basin Index was less than 11.35; or (3) the second consecutive Dry Year following a Critical Year.

(e) "Delta" shall mean the Sacramento-San Joaquin Delta as it is presently defined in Section 12220 of the Water Code;

(f) "Delta Outflow Index" shall mean an index of Delta outflow computed daily by USBR and DWR, as described on page IV-7 of the "Water Quality Control Plan, Sacramento-San Joaquin Delta and Suisun Marsh", dated August 1978, prepared by SWRCB.

(g) "Electrical Conductivity" (EC) shall mean the electrical conductivity of a water sample measured in millimhos per centimeter (mmhos/cm) corrected to a standard temperature of 25 Celsius determined in accordance with procedures set forth in the publication entitled, "Standard Methods of Examination of Water and Waste Water", published jointly by the American Public Health Association, the American Water Works Association, and the Water Pollution Control Federation, 13th Edition, 1971, including such revisions thereof as may be made subsequent to the date of this Agreement which are approved in writing by the parties.

(h) "Exterior Levees" shall mean levees which protect the Marsh against inundation and uncontrolled flooding and are identified in the "Suisun Marsh Levee Evaluation" report dated February, 1983, prepared by Ramlit Associates for the United States Corps of Engineers.

(i) "Four Basin Index" shall mean the sum of the unimpaired runoff in the Water Year as published in California

Department of Water Resources Bulletin 120 for the following locations: Sacramento River above Bend Bridge, near Red Bluff; Feather River, total unimpaired inflow to Oroville Reservoir; Yuba River at Smartville; American River, total unimpaired inflow to Folsom Reservoir.

(j) "Individual Ownership" shall mean separately owned parcels of land in the Marsh, other than those on Roe, Ryer, Freeman, and Snag Islands or the owners thereof. Contiguous parcels owned by the same legal entity comprise a single Individual Ownership.

(k) "Initial Facilities" shall mean the facilities for the Roaring River Slough Unit, the Goodyear Slough Outfall, and the Morrow Island Distribution System constructed pursuant to the contract of December 18, 1978.

(l) "Marsh" shall mean the Suisun Marsh as it is presently defined in Section 29101 of the Public Resources Code.

(m) "Marsh Model" shall mean the computer model consisting of MRSHFLO and MRSHQAL originally developed by Hugo Fischer, Inc. under contract with USBR as modified by USBR and DWR.

(n) "Overall Facilities" shall mean water delivery, distribution, redistribution, intake and drainage facilities as shown in Attachment A, which is made a part of this Agreement. These facilities are described in the Plan. The Initial Facilities are a part of the Overall Facilities.

(o) "Plan of Protection" (Plan) shall mean the plan prepared by DWR dated February, 1984 to mitigate the effects of the CVP and SWP on the Marsh and any subsequent modifications.

(p) "Scheduled Water" shall mean firm supplies of the CVP or SWP, plus such additional water ordered from the SWP by a contractor the previous September which does not exceed the maximum annual entitlement of that contractor.

(q) "Water Year" or "Year" shall mean the period October 1 of any year through September 30 of the following year.

(r) "Wet Year", "Above Normal Year", "Below Normal Year" and "Subnormal Snowmelt Year" are as defined in Footnote 2 of Table II of D-1485 as adopted by the SWRCB in August 1978. "Critical Year" and "Dry Year" are also as defined in Footnote 2 of Table II of D-1485 except that runoff for the remainder of the water year shall be assumed to be equal to the lower value of the 80 percent probability range, as shown in the most recent issue of Bulletin 120, "Water Conditions in California".

2. Objectives

The objectives of this Agreement are:

(a) To assure that USBR and DWR maintain a dependable water supply of adequate quantity and quality within the Marsh to mitigate the adverse effects on the Marsh of the CVP and SWP and a portion of the adverse effects of the other upstream diversions;

(b) To improve Marsh wildlife habitat to the extent that such improvement is compatible with other CVP and SWP purposes;

(c) To define the scope of the obligations of USBR and DWR to provide the water supply, distribution, redistribution and management facilities necessary to accomplish the objectives in (a) and (b); and

(d) To assure that USBR and DWR recognize that the water users within the Marsh have been diverting and will continue to divert water for wildlife habitat management within the Marsh.

3. Water Quality Standards

The water quality standards to be met under this Agreement are:

(a) Initial Standards;

The standards of this subarticle are to be met only until DFG and SRCD request, based on evaluation of facilities constructed pursuant to Article 8, that the standards specified in subarticles (b) and (c) be put into effect, subject to the provisions of subarticle 8(h). These are:

(i) The 28-day running average of mean daily EC at C&A Ferry Landing on Chipps Island shall not exceed 12.5 mmhos from October through May, except that the comparable EC shall be 15.6 mmhos from October through December in any calendar year when the CVP or the SWP water contractors are taking a deficiency in Scheduled Water.

(ii) The minimum mean monthly Delta Outflow Index during the period January through May shall be 6,600 cfs whenever storage is at or above the minimum level in the flood control reservation envelope at any two of the following: Shasta Reservoir, Oroville Reservoir, and CVP storage on the American River. In addition, in Above Normal and Below Normal Years, the minimum 14-day running average Delta Outflow Index will be 12,000 cfs for 60 consecutive days in the period January through April. In Wet Years the minimum mean monthly Delta Outflow Index

from February through May will be 10,000 cfs, except in Subnormal Snowmelt years when the period shall be February through April.

(b) Normal Standards

(i) As each facility constructed pursuant to Article 8 becomes Operational, and after the Initial Standards are no longer in effect pursuant to (a) above, the standards in Table I shall be met, except during Deficiency Periods, at the Control Stations (Table II and Figure I) listed for each facility as follows:

Facility	Control Stations
Montezuma Slough Control Structure	C-2, S-64 and S-49
Boynton-Cordelia Unit	S-21 and S-97
Cordelia-Goodyear Unit	S-75
Grizzly Island Unit	No additional station
Potrero Hills Unit	S-42

(ii) The Initial Facilities and those facilities constructed pursuant to this Agreement will be operated to minimize water salinities in the Marsh only so far as such operations do not create a need for additional upstream water releases, do not limit exports, do not harm fishery resources, significantly benefit wildlife habitat, and do not require that the Montezuma Slough Control Structure stoplogs remain in place beyond the time otherwise required to meet this Agreement.

TABLE I[1/]

MEAN MONTHLY HIGH TIDE[2/] ELECTRICAL CONDUCTIVITY (mmhos/cm)

Month	Normal Standards
October	19.0
November	16.5
December	15.5
January	12.5
February	8.0
March	8.0
April	11.0
May	11.0

1/ The same standards apply at all Control Stations in effect, although it is recognized that better quality water will be present at some Control Stations due to a salinity gradient within the Marsh.

2/ The monthly mean of both daily high tide ECs.

TABLE II
CONTROL STATIONS

Sacramento River at Collinsville Road in Collinsville (C-2)[1/]

Montezuma Slough at National Steel (three miles south of Mein's Landing) (S-64)[1/]

Montezuma Slough near Beldon Landing (0.35 miles east of Grizzly Island Bridge) [S-49][2/]

Suisun Slough 300 feet south of Volanti Slough (S-42)[1/]

Goodyear Slough south of proposed Goodyear Slough Control Structure [Proposed S-75][2/]

Cordelia Slough at Cordelia-Goodyear Ditch [Proposed S-97][2/]

Chadbourne Slough at Chadbourne Road [Proposed S-21][2/]

Cordelia Slough, 500 feet west of the Southern Pacific crossing at Cygnus (S-33)[3/]

Goodyear Slough at the Morrow Island Clubhouse (S-35)[3/]

1/ D-1485 station numbers shown in parentheses.
2/ These stations will be proposed to SWRCB as substitutes for existing D-1485 Control Stations.
3/ Existing D1485 Control Station. To be replaced by alternate station unless retained as provided for in Article 8.

(c) Deficiency Standards

After the Initial Standards are no longer in effect pursuant to (a) above, Table III standards shall be substituted for Table I standards during Deficiency Periods, but other requirements of subdivision (b) above will continue in effect. The designation of a Deficiency Period shall continue until a Year is determined to be other than a Dry or Critical Year.

TABLE III[1]/

MEAN MONTHLY HIGH TIDE[2]/ ELECTRICAL CONDUCTIVITY (mmhos/cm)

Month	Deficiency Standards
October	19.0
November	16.5
December	15.6
January	15.6
February	15.6
March	15.6
April	14.0
May	12.5

1/ The same standards apply at all Control Stations in effect, although it is recognized that better water quality will be present at some Control Stations due to a salinity gradient within the Marsh.

2/ The monthly mean of both daily high tide EC's.

4. Review of Operations

(a) Every fifth year after this Agreement is executed the parties will review the effectiveness of the facilities constructed pursuant to this Agreement. The purpose of the review will be to determine if objectives of this Agreement are being achieved and if any adjustments are needed. During the review, recognized authorities such as U. C. Extension Service and U. S. Salinity Laboratory shall be asked to comment. Information on the relationships among water salinity, soil water salinity, and plant salinity tolerance gained from the Marsh monitoring program shall be considered during the review.

(b) Any necessary adjustments will be made by amending this Agreement.

5. Monitoring

DWR and DFG will monitor and report on surface water and soil water qualities, water elevations, marsh vegetation and wildlife species in accordance with the agreement among DWR, DFG, and USBR to provide for monitoring in the Marsh dated _____ (monitoring agreement) or as it may be amended. Monitoring data will be available for inspection by SRCD.

FIGURE 1

SUISUN MARSH

CONTROL STATION LOCATIONS

C-2	SACRAMENTO RIVER AT COLLINSVILLE
S-21	CHADBOURNE SLOUGH AT CHADBOURNE ROAD
S-33	CORDELIA SLOUGH 500 FEET WEST OF EFRR
S-35	GOODYEAR SLOUGH AT MORROW ISLAND CLUBHOUSE
S-42	SUISUN SLOUGH 300 FEET SOUTH OF VOLANTI SLOUGH
S-49	MONTEZUMA SLOUGH NEAR BELDON LANDING-0.35 MILES EAST OF GRIZZLY ISLAND BRIDGE
S-64	MONTEZUMA SLOUGH THREE MILES SOUTH OF MEIN'S LANDING
S-75	GOODYEAR SLOUGH SOUTH OF CONTROL STRUCTURE
S-97	CORDELIA SLOUGH AT CORDELIA-GOODYEAR DITCH

NOTE: THIS MAP FOR REFERENCE ONLY. THE SPECIFIC LOCATIONS ARE AS DESCRIBED IN TABLE II OR ARTICLE 6(b).

1 0 1 2 3 4

APPROXIMATE SCALE IN MILES

Figure 1

6. Mitigation

USBR and DWR shall provide wetlands mitigation in accordance with the agreement among DWR, DFG, and USBR to provide waterfowl habitat in the Suisun Marsh dated _____ for:

(1) the impacts on wetland habitat resulting from construction required under this Agreement, and

(2) adverse effects on Roe, Ryer, Snag, and Freeman Islands resulting from upstream water diversions.

7. Individual Ownership Facilities

(a) USBR and DWR will reimburse each Individual Ownership through SRCD fifty (50) percent of the initial cost of purchasing and installing any water intake and discharge facilities, other than those provided for in I through XI of Attachment A, necessary to enable the Individual Ownership to flood and drain its property within 30 days where such operation is necessary to achieve adequate levels of waterfowl food production as determined by DFG. It is recognized that water intake and discharge facilities on an Individual Ownership may supply water to or drain water from other Individual Ownerships. The total reimbursement obligation of USBR and DWR under this Article shall be limited to the amount specified in subarticle (c) and shall only be used for those water intake and discharge gates, culverts, flashboard risers, and pumps identified in the engineering level Individual Ownership Management Program developed for the property by SRCD, approved by DFG, and certified by the San Francisco Bay Conservation and Development Commission (BCDC).

(b) Prior to reimbursement pursuant to subarticle (a) the Individual Ownership shall first enter into an agreement with USBR, DWR, and SRCD which shall provide that the Individual Ownership will either follow the "needed practices" identified in its Individual Ownership Management Program or will repay with interest the funds provided by USBR and DWR.

(c) The obligation of USBR and DWR under this Article shall not exceed $995,000 (July 1, 1985 dollars, plus or minus such amounts, if any, as may be justified by ordinary fluctuations in construction costs, as indicated by the "Engineering News-Record's" cost indexes), shared in accordance with Article 12. USBR and DWR obligations under this Article shall terminate four years after the Montezuma Slough Control Structure Becomes Operational, or four years after the execution of this Agreement, whichever is later.

8. Construction and Operation of Facilities

(a) DWR shall construct the Montezuma Slough Control Structure, the Cygnus Unit, the Lower Joice Island Unit and the Annie Mason Island Unit by the end of the 1988 Construction Season provided that the work on Annie Mason Island shall not begin until the Exterior Levees of the Island are intact, which may delay completion of that unit until after 1988.

(b) When the Montezuma Slough Control Structure Becomes Operational, USBR and DWR shall test and evaluate its effectiveness in meeting the standards of subarticles 3(b) and (c), and decide which additional facilities are needed to meet those standards. Not later than three years after the Montezuma Slough Control Structure Becomes Operational:

(i) either Station S-33 will be substituted for Station S-97 in subarticle 3(b)(i) and DWR and USBR shall meet the standards in subarticle 3(b) and (c) at Stations S-21 and S-33, or DWR shall construct the Boynton-Cordelia Unit, or an alternate facility, and DWR and USBR shall meet the standards of subarticles 3(b) and (c) at Stations S-21 and S-97 not later than the end of the fifth full construction season after the Montezuma Slough Control Structure Becomes Operational; and

(ii) either DWR and USBR shall meet the standards in subarticle 3(b) and (c) at Station S-35, with that station being substituted for Station S-75 in Article 3(b)(i), or DWR shall construct the Cordelia-Goodyear Unit, or an alternate facility, and DWR and USBR shall meet the standards of subarticle 3(b) and (c) at Station S-75 not later than the end of the sixth full construction season after Montezuma Slough Control Structure Becomes Operational.

(c) USBR and DWR shall evaluate the need for the Grizzly Island Unit or an alternate facility to supply water meeting the standards of subarticles 3(b) and (c) to the area to be served by the Grizzly Island Unit. If the Grizzly Island Unit or an alternate facility is needed, DWR shall construct it in accordance with one of the following schedules:

(i) By the end of the seventh full Construction Season after the Montezuma Slough Control Structure Becomes Operational, if both the Boynton-Cordelia and Cordelia-Goodyear Units or alternate facilities are constructed; or

(ii) By the end of the sixth full Construction Season after the Montezuma Slough Control Structure Becomes Operational, if either the Boynton-Cordelia Unit or the Cordelia-Goodyear Unit or alternate facilities are not constructed.

(d) After the facility provided for in Subarticle (c) Becomes Operational or has been determined to not

be needed, USBR and DWR shall evaluate their ability to meet the standards of subarticle 3(b) and (c) at Station S-42 with the existing facilities. If USBR and DWR, based on the results of that evaluation, determine that further construction is unnecessary then they shall meet the standards in subarticles 3(b) and (c) at Control Station S-42 not later than three years from the date the facility provided for in subarticle (c) Becomes Operational or has been determined to not be needed. However, if they determine from that evaluation that the Potrero Hills Unit is needed, they shall complete construction of that unit or an alternate facility by the end of the fifth full Construction Season from the date the facility provided for in subarticle (c) Becomes Operational.

(e) Preliminary plans and specifications shall be furnished to USBR, SRCD, and DFG for review and comments. USBR and DWR shall consider the comments if received within thirty working days of the date the preliminary plans and specifications are furnished for review. Responses to comments will be provided on request of the parties. After comments and revisions have been considered, the plans and specifications shall be submitted to USBR for approval. The approval process shall be completed within 30 working days of the time DWR submits the plans to USBR for approval. All facilities shall be constructed substantially in accordance with the plans and specifications jointly approved by USBR and DWR.

SRCD, DFG, and the Individual Ownerships will incur no liability for the adequacy or suitability of any design as depicted in the preliminary plans and specifications by providing comments. Right-of-way agreements with Individual Ownerships will describe those design features which will be owned and operated by the Individual Ownership concerned.

(f) Before a facility Becomes Operational, it shall be operated to meet the applicable standards in subarticles 3(b) and (c) insofar as reasonably possible.

(g) The parties agree that if the facilities constructed pursuant to this Article do not provide the applicable water quality as specified in subarticles 3(b) and (c) due to inadequate design or construction, then USBR and DWR shall promptly modify the appropriate facility as necessary in accordance with subarticle 8(e). Pending completion of the modifications, USBR and DWR shall be relieved of the responsibility for meeting any standards dependent on the defective facility. To the extent possible, the defective facility will be operated to meet the objectives of this Agreement. Isolated minor incidents of failure to meet the applicable standards shall not be construed as requiring modification of a facility.

(h) The parties agree that if either the Marsh Model predictions or the Delta outflow/salinity relationships upon which this Agreement is based are substantially in error, they will renegotiate this Agreement. Pending renegotiation: (1) no

further facilities will be constructed; (2) the standards in effect prior to construction of the last facility will be met; and (3) the last facility will be operated to meet the standards provided for in this Agreement insofar as reasonably possible.

(i) If an Individual Ownership is unable to flood and drain within a thirty-day period due to either the design, construction, or operation of the Initial Facilities or facilities constructed pursuant to this Article, and, if the 30-day flood and drain capacity is necessary for that Individual Ownership to achieve adequate levels of waterfowl food production, as determined by DFG, then USBR and DWR shall modify the facilities or their operation as is necessary in accordance with subarticle 8(e).

(j) When the Montezuma Slough Control Structure Becomes Operational, USBR and DWR shall monitor and evaluate the quality of the water supply for Van Sickle and Chipps Island as measured at the O&A Ferry Landing on Chipps Island, or its equivalent.

DWR and USBR shall design, construct, and operate facilities, in accordance with subarticle 8(e), to provide water of the required quality, if either:

(i) the monitoring indicates that the EC of the water supply for either or both of the islands has actually exceeded the applicable standards in subarticles 3(b) and (c) for any four months in any two consecutive years, or

(ii) the evaluation projects that the EC of the water supply for either or both of the islands will exceed the applicable standards in subarticles 3(b) and (c) by more than ten percent for any four months in any two consecutive years.

If the evaluation indicates facilities will not be needed, the parties shall reassess the evaluation during each Review of Operation provided for in Article 4.

If facilities are determined to be needed, the scheduling of construction of these facilities shall be through consultation with SRCD and DFG.

(k) The responsibility for operation and maintenance of facilities shall be as listed in Attachment B which is made a part of this Agreement. DWR is shown as acting as the lead agency in Attachment B. However, USBR and DWR share responsibility for funding in accordance with Article 12.

9. Public Access

Lands owned or to be acquired in fee title by the State which are used for the construction or maintenance of the Overall Facilities may be accessible to the public for recreation use. With the exception of lands under DFG management, USBR and

DWR shall mutually determine after consultation with DFG and SRCD the extent to which such lands should be used for recreation consistent with safety, operational needs and potential damage to other lands.

10. Rights of Way

Where rights of way are required for work to be done under this Agreement, SRCD will exercise its best efforts to assure that the necessary easements and/or other appropriate title for each facility are granted. Delay in acquisition may delay completion of a facility within the time requirements provided for in Article 8 but shall not change the responsibility to complete that facility as expeditiously as possible.

11. Assurances

To assure the effective utilization of the water to be provided:

(a) SRCD shall diligently exercise its authority to require that Individual Ownerships be managed and operated in accordance with their Individual Ownership Management Programs, and so as not to interfere with the operation of the Overall Facilities.

(b) If the parties agree that an Individual Ownership by its acts or omissions interferes with the operation of any of the Overall Facilities and as a result the provisions of Article 3 cannot be met, then during the period of the Individual Ownership's interference, DWR and USBR shall neither be required to meet:

(i) the water quality standards which are affected by that interference; nor

(ii) the requirements of Subarticle 8(i) as it applies to the specifically affected Individual Ownerships.

(c) SRCD shall facilitate the formation of levee maintenance districts necessary to protect the facilities constructed pursuant to this Agreement. If USBR and DWR are unable to meet the standards because the Exterior Levees are in disrepair, USBR and DWR shall not be required to meet the standards to the extent the Exterior Levees are responsible.

(d) Nothing herein shall constitute a waiver of any rights USBR and DWR may have to pursue claims of damage due to failure to maintain the Exterior Levees.

12. Cost Sharing

(a) USBR shall pay Forty Percent (40%) and DWR shall pay Sixty Percent (60%) of the costs assigned to DWR and

USBR pursuant to Articles 5, 6, 7 and 8, whether incurred prior to the date of this Agreement or thereafter. The term "costs" shall include costs of planning, design, construction, operation, maintenance, and recreation. The term "costs" shall also include all administrative overhead, costs of liability insurance or pooling programs and other costs similar to those normally incurred by USBR which will be incurred by DWR in performance of the obligations under this Agreement.

(b) Specifically concerning design, planning, and construction costs, it is further agreed that USBR's share of these costs shall not exceed $50 million, July 1985 dollars, plus or minus such amounts, if any, as may be justified by reason of ordinary fluctuation in construction costs, as indicated by the "Engineering News-Record's" cost indexes.

(c) The United States shall pay to DWR the costs determined to be allowable by the Contracting Officer in accordance with the terms of this Agreement and with provisions of Federal Acquisition Regulations (FAR), Part 31, Subpart 6, 48 CFR Sections 31.601-31.603. If DWR uses any funds advanced pursuant to this Agreement for purposes not in accordance with this Agreement or not in compliance with FAR Part 31, Subpart 6, DWR shall reimburse USBR for the amount of any such improperly used funds.

(i) The USBR's share of costs incurred by DWR prior to the date of this Agreement plus the interest from the dates such costs were incurred, at the State Surplus Money Investment Fund rates, shall be paid to DWR in a lump sum payment following an audit of such costs by an authorized representative of the USBR, to be completed within six months after the execution of this Agreement.

(ii) On or before the first day of each month, after the date of this Agreement, USBR shall advance its contributions specified in this Article, in accordance with a billing statement furnished by DWR regarding expenditures estimated to be incurred during the month. Adjustments for overpayments or underpayments during a quarter shall be made in the quarter immediately following. Advances will be maintained at a level commensurate with current needs.

(d) Each year on or before September 15, DWR shall furnish to USBR a proposed budget of the estimated costs by quarter to be incurred under Articles 5, 6, 7 and 8 of this Agreement during the fiscal year beginning a year later on October 1, and the respective contributions of the parties. USBR shall notify DWR by the following September 15 of its full or partial approval of DWR's proposed budget. USBR's approval shall not be unreasonably withheld. In the event that USBR does not approve all budgeted costs, such unapproved costs shall not be eligible for reimbursement by USBR until such time as they are mutually

agreed upon by DWR and USBR. To facilitate USBR's review, each year's proposed budget should:

(i) include a schedule by physical feature or descriptive title of estimated operation and maintenance costs, supplemented with a narrative description which adequately describes and explains all major aspects of the fiscal year's proposed O&M program; and

(ii) include a schedule of estimated construction costs identifying major structures, facilities and related activities of the fiscal year's proposed construction program.

(e) Separate cost accounts shall be maintained by physical feature or descriptive title to permit ready audit.

13. Miscellaneous Provisions

(a) USBR and DWR have no objection to Individual Ownerships diverting water from the Marsh channels for wildlife habitat management on lands within the Marsh. USBR and DWR shall not disturb or challenge said diversions and uses so long as they are consistent with this Agreement while it is in full force and effect.

(b) SRCD and DFG shall not claim any right against USBR or DWR in conflict with the provisions hereof so long as this Agreement remains in full force and effect.

(c) This Agreement shall not affect, bind, prejudice, impair, restrict, or limit water rights pertaining to lands within the Marsh.

(d) SRCD consents to the storage of water and export of water from the Delta by the CVP and SWP so long as this Agreement remains in full force and effect and USBR and DWR are in compliance herewith.

(e) The parties agree to defend as reasonable and beneficial the water qualities established in this Agreement.

(f) DWR agrees to forego the use of eminent domain proceedings to acquire water rights in the Marsh.

14. SWRCB Approval

After this Agreement is executed by all the parties, they shall jointly petition the SWRCB to find that:

(a) DWR and USBR are taking appropriate action to mitigate the impacts of the CVP and SWP on the Marsh; and

(b) the Agreement is to be substituted for the Marsh standards in the CVP and SWP water rights permits.

15. Sharing of Water

When appropriate, the criteria identified in Article 6 of the "Agreement Between the United States and the California Department of Water Resources for the Coordinated Operation of the Federal Central Valley Project, and California State Water Project" (COA), dated ..... shall be amended in accordance with the provisions of Article 14 of the COA to reflect the provisions of this Agreement.

16. Term of Agreement

This Agreement and any amendments hereto shall continue in full force and effect until terminated by the written agreement of all the parties.

17. Amendments

This Agreement may be amended at any time by mutual agreement of USBR, DWR, DFG and SRCD.

18. Remedies

Neither DWR nor USBR is responsible for the other's obligation under this Agreement.

19. Opinions and Determinations

Where the terms of this Agreement provide for action to be based upon the opinion, judgment, approval, review, or determination by the parties, such terms are not intended to be and shall not be construed as permitting such opinion, judgment, approval, review, or determination to be arbitrary, capricious, or unreasonable.

20. Successors and Assigns Obligated

This Agreement and all of its provisions shall apply to and bind the successors and assigns of the parties hereto.

21. Books, Records, Reports and Inspections

Subject to the applicable Federal and State laws and regulations, each party shall have the right to examine and make copies of each others books and official records relating to matters covered by this Agreement.

22. Waiver of Rights

Waiver at any time by any party hereto of its rights with respect to a default, or any other matter arising in connection with this Agreement, shall not be deemed to be a waiver with respect to any other default or matter.

23. Notices

All notices that are required either expressly or by implication to be given by one party to another shall be deemed to be given if delivered personally, or if enclosed in a properly addressed certified postage prepaid envelope with return receipt requested deposited in a United State Post Office. Unless or until formally notified otherwise, notices to the parties shall be addressed as follows:

Regional Director,
U. S. Bureau of Reclamation
2800 Cottage Way
Sacramento, CA 95825

Director, Department of Water Resources
P. O. Box 388
Sacramento, CA 95802

Director, Department of Fish and Game
1416 Ninth Street
Sacramento, CA 95814

Manager, Suisun Resource Conservation District
P. O. Box 426
Suisun, CA 94585

24. Contingent Upon Availability of Funds

(a) Twenty percent of the funds to be expended for design and construction pursuant to Articles 5, 6, 7 and 8 shall be contingent on the appropriation of funds by the State Legislature for such purposes.

(b) The expenditure or advance of any money or the performance of any work by the United States hereunder which may require appropriation of money by the Congress or the allotment of funds shall be contingent upon such appropriation or allotment being made. No liability shall accrue to the United States in case such funds are not appropriated or allotted.

IN WITNESS WHLREOF, the parties hereto have executed this Agreement on the date first written above.

_____
Regional Director, Mid-Pacific Region
United States Bureau of Reclamation

Date_____

_____
Director, Department of Water Resources

Date:_____

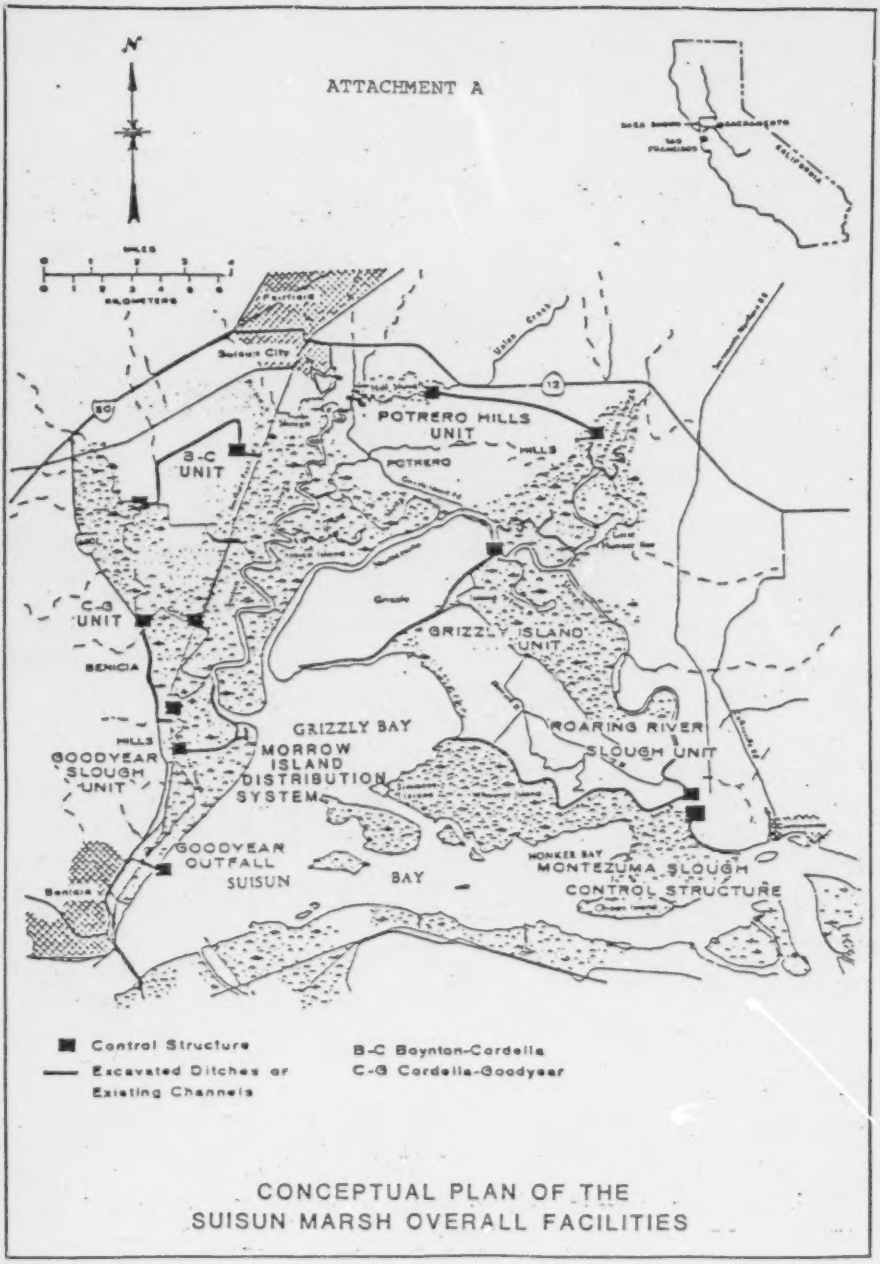
_____
Director, Department of Fish and Game

Date:_____

_____
President, Suisun Resource Conservation District

Date:_____

ATTACHMENT A



CONCEPTUAL PLAN OF THE
SUISUN MARSH OVERALL FACILITIES

ATTACHMENT "A"

OVERALL FACILITIES

I. Roaring River Slough Unit (Constructed)

A. Intake Facilities, including fish screens, control gates, culverts, tide gates, and the levee and road over the culverts.

B. Hammond Island Reservoir, 40 acres in the southeast corner of DF&G property adjacent to Montezuma Slough and Roaring River and the levees surrounding the reservoir.

C. Roaring River channel, including its north and south levees, the Mud Slough arm, including its north and south levees, and the crossing structures.

D. Wheeler Island boat ditches, levee and control gates.

E. Individual Ownership water intake and discharge facilities. These facilities include control gated culverts and access thereto.

F. A drainage facility, consisting of a control gated culvert.

II. Goodyear Slough Unit (Constructed)

A. Goodyear Slough Outfall, including a structure consisting of culverts with control gates discharging to a channel dredged from Goodyear Slough to the Bay.

B. Morrow Island Distribution System, including an intake structure consisting of a levee with control gated culverts through it, a ditch with levees on both sides, outlet structures consisting of levees with control gated culverts through them and access thereto.

C. Individual Ownership water intake facilities. These facilities include control gated culverts and access thereto.

D. The drainage facilities from the certain Individual Ownerships. These facilities include control gated culverts and access thereto.

E. The pond levee with flow controlled culverts north of Morrow Island Ditch.

III. Montezuma Slough Control Structure

A. Three radial gates, a boat lock 20 feet wide, and a flashboard opening 66 feet wide.

IV. Grizzly Island Unit

A. Intake Facilities, including fish screens, control gates, culverts, tide gates and the levee and road over the culverts.

B. Reservoir, 120 acres regulating reservoir.

C. Grizzly Island channel, including its north and south levees.

D. Lateral water supply ditches, including their east and west levees.

E. Individual Ownership water intake and discharge facilities. These facilities include control gated culvert(s) and access thereto.

V. Potrero Hills Unit

A. Intake and outlet facilities, including control gates, culverts, the levee and road over the culverts.

B. Potrero Hills channel, including its north and south levees and the crossing structures.

C. Ponds, two 15 acre ponds.

D. Necessary dredging in Luco and Hill Sloughs.

VI. Cordelia-Goodyear Unit Ditch

A. Intake and outlet facilities, including control structures, control gates, culverts, tide gates, and the levees and road over the culverts.

B. Cordelia-Goodyear channel, including its east and west levees and crossing structures.

C. Pond, one 20 acre pond.

D. Provision to handle storm runoff from the existing highway culverts.

E. Individual Ownership intake and discharge facilities. These facilities include control gated culvert(s) and access thereto.

F. Goodyear Slough Control Structure, including control gates and the levee and road over structure.

VII. Cygnus Unit

A. Drain facility consisting of 36-inch culvert, gate and flashboard riser on Individual Ownership No. 415.

VIII. Boynton-Cordelia Ditch Unit

A. Intake and outlet facilities, connection from Fairfield Suisun Sanitary District treatment plant.

B. Boynton Cordelia channel, including north and south levees, Chadbourne Road crossing structure and two siphons.

C. Necessary dredging in Boynton Slough relocation of Reclamation Ditch, provision of facility to handle sheet runoff.

IX. Lower Joice Island Unit

A. Fill facility consisting of 36-inch culvert and gate on Individual Ownership No. 424.

B. Connection to existing distribution system on Individual Ownership No. 424.

X. Annie Mason Island Unit

A. Installation of a diesel powered pump on Individual Ownership No. 801.

B. Connection to existing distribution system on Individual Ownership No. 801.

XI. Van Sickle/Chipps Island Unit (to be constructed when and if needed).

XII. Individual Ownership Facilities

A. Individual Ownership water management facilities as provided for in Article 7 of the Agreement.

ATTACHMENT "B"

RESPONSIBILITY FOR
SUISUN MARSH PLAN OF PROTECTION FACILITIES

Item	Design	Construction	Operate	Maintain
Montezuma Slough Control Structure				
All facilities	DWR	DWR	DWR	DWR
Grizzly Island Unit				
Intake structure	DWR	DWR	DWR	DWR
Fish screens	DWR	DWR	DWR	DWR
Ditch (including pond)	DWR	DWR	--	DWR
Laterals	DWR	DWR	--	DWR
Levees 2/	DWR	DWR	--	DWR
Crossing structures	DWR	DWR	--	DWR/County 6/
Turnouts	DWR 1/	DWR 1/	Landowner	Landowner 4/
Potrero Hills Unit				
Intake and outlet structures including dredging in Luco and Hill Sloughs	DWR	DWR	DWR	DWR
Ditch	DWR	DWR	--	DWR
Crossing structures	DWR	DWR	--	DWR/County 6/
Cordelia-Goodyear Unit				
Intake and outlet structures	DWR	DWR	DWR	DWR
Ditch (including ponds)	DWR	DWR	--	DWR
Laterals	DWR	DWR	--	DWR
Levees	DWR	DWR	--	DWR
Crossing structures	DWR	DWR	--	DWR/County 6/
Turnouts	DWR 1/	DWR 1/	Landowner	Landowner 4/
Goodyear Slough Control Structure	DWR	DWR	DWR	DWR
Boynton-Cordelia Unit 5/				
Intake and outlet structures	DWR	DWR	DWR	DWR
Ditch	DWR	DWR	--	DWR
Levees	DWR	DWR	--	DWR
Crossing structures	DWR	DWR	--	DWR

Item	Design	Construction	Operate	Maintain
Cygnus Unit				
Turnouts	DWR 1/	DWR 1/	Landowner	Landowner
Roaring River Unit				
Intake structures	DWR	DWR	DWR	DWR
Fish screens	DWR	DWR	DWR	DWR
Modified Channel (including pond)				
Levees 2/	DWR	DWR	--	DFG/DWR 3/
Laterals	DWR	DWR	--	DWR
Crossing structures	DWR	DWR	DWR	DWR
Turnouts	DWR 1/	DWR 1/	Landowner	Landowner 4/
Goodyear Slough Unit				
Intake structure	DWR	DWR	DWR	DWR
Outfall structure	DWR	DWR	DWR	DWR
Channel	DWR	DWR	--	DWR
Morrow Island Distribution System 2/	DWR	DWR	--	DWR
Turnouts and drainage facilities	DWR 1/	DWR 1/	Landowner	Landowner 4/
Lower Joice Island Unit				
Turnout	DWR	DWR	Landowner	Landowner 4/
Connection to the existing distribution system	DWR	DWR	--	DWR
Annie Mason Island Unit				
Pump	DWR	DWR	Landowner	DWR
Connection to the existing distribution system	DWR	DWR	--	DWR
Van Sickle/Chipps Island Unit	To be determined if constructed			

1/ Specific turnouts and drain gates to be identified on design plans.

2/ Main channel water control levees only.

3/ DFG shall be responsible for maintaining the North Levee on Roaring River except for subsidence which prevents the Roaring River Unit from meeting its design purposes.

4/ DWR and USBR shall correct any deficiency due to design or construction which prevents any water facility from passing its design flow rate until May of the third operating season after the water facility Becomes Operational. After this period, all necessary corrections shall be the responsibility of the landowner of the Individual Ownership.

5/ An outfall is to be constructed to the Boynton-Cordelia pond from its treatment plant by Fairfield-Suisun Sanitary District (FSSD) at its expense.

6/ To be determined by separate agreement.

SUISUN MARSH MITIGATION AGREEMENT
Among
The Department of Water Resources
The Department of Fish and Game
and
The United States Bureau of Reclamation

November 1, 1985

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11/1/85

SUISUN MARSH MITIGATION AGREEMENT
Among
The Department of Water Resources
The Department of Fish and Game
and
The United States Bureau of Reclamation

THIS Agreement dated this _____ day of _____, 1985, is hereby entered into among the California Department of Water Resources (DWR) and the California Department of Fish and Game (DFG) and the United States Bureau of Reclamation (USBR).

RECITALS

Waterfowl habitat in the Suisun Marsh will be (1) lost due to the construction of facilities in accordance with the Suisun Marsh Preservation Agreement among DWR, USBR, DFG and Suisun Resource Conservation District (SRCD) dated _____ (SMPA), and (2) degraded by the impacts of the Central Valley (CVP), the State Water Project (SWP), and other upstream diverters on the Channel Islands (Roe, Ryer, Freeman and Snag). The parties hereto are willing to provide for the acquisition, development, operation and maintenance of mitigation lands in accordance with the terms and conditions set forth below to offset such losses and degradation.

AGREEMENT

1. Definitions -- When used herein, the term:

   "Mitigation Lands" shall mean those lands that are to be acquired, developed, operated and maintained by DFG to offset loss and degradation of waterfowl habitat resulting from the construction of facilities in accordance with the SMPA and impacts of the CVP, the SWP, and other upstream diverters on the Channel Islands.

2. Mitigation Lands and Funding -- Table 1 below lists the acreage and estimated costs of mitigation lands which may be necessary. If the facilities constructed or to be constructed in accordance with the SMPA are changed, the acreage and costs set forth in Table 1 shall be adjusted, if necessary, by mutual agreement of the parties.

Table 1

Phases of Acquistion and Development	Mitigation Lands (Acres)	Estimated Costs of Mitigation Lands (July 1985 dollars) Acquisition & Development1/ (x $1000)	Operation & Maintenance2/ (x $1000)
Phase A			
Initial Facilities (Roaring River Unit, Morrow Island Ditch, and Goodyear Slough Outfall) Montezuma Slough Control Structure One-half Channel Islands	354	2478	885
Phase B			
Boynton-Cordelia Unit	47	329	118
Cordelia-Goodyear Unit	44	308	110
Grizzly Island Unit	172	1204	430
Protrero Hills Unit	49	343	122
Phase C			
Other one-half of Channel Islands	227	1589	568
TOTAL	893	6251	2233

1/ Acquisition and Development costs are based on $7000 per acre.
2/ Operation and Maintenance costs are based on $2500 per acre.

3. Phases of Acquisition, Development, Operation, and Maintenance of Mitigation Lands --

(a) Prior to commencement of construction of the Montezuma Slough Control Structure, DWR shall pay to DFG the total estimated costs of mitigation lands set forth in Table 1 for Phase A. One hundred (100) acres of the land acquired with such funds shall be developed, operated and maintained for habitat for the salt marsh harvest mouse to comply with the Section 7 determination of the U.S. Fish and Wildlife Service, dated December 7, 1981.

(b) Prior to commencement of construction of each unit identified in Phase B of Table 1, DWR shall pay to DFG

the total estimated cost of mitigation lands for such unit set forth in Table 1, plus or minus such amounts, if any, as may be justified by reason of ordinary fluctuations in costs. Acquisition and Development costs will be adjusted using applicable "Enginering News Record" cost indexes, and Operation and Maintenance costs will be adjusted using USBR's "Water Systems Operation and Maintenance Cost Trends".

(c) DWR shall pay to DFG the amounts specified in Phase C of Table 1 on December 31, 1997, plus or minus such amounts, if any, as may be justified by reason of ordinary fluctuations in costs. Acquisition and Development costs will be adjusted using applicable "Engineering News Record" cost indexes, and Operation and Maintenance costs will be adjusted using USBR's "Water Systems Operation and Maintenance Cost Trends".

(d) USBR and DWR may jointly approve DFG acquisition of mitigation lands in variance with Table 1, subject to such terms and conditions as are mutually agreeable to the parties.

4. Miscellaneous Provisions --

(a) DFG shall develop and submit to USBR, DWR, and SRCD plans for the acquisition, development, operation, and maintenance of mitigation lands. USBR, DWR, and SRCD shall review and comment on such plans within 30 days of the date of submittal.

(b) DFG shall acquire, develop, operate, and maintain mitigation lands as cost effectively as possible. In its discretion, DFG may develop, operate, and maintain lands which it already owns as mitigation lands, provided that in such cases the Acquisition and Development costs in Table 1 shall be reduced by $2000 per acre to exclude acquisition costs.

(c) To the extent feasible, DFG shall make the mitigation lands available to the public for recreational purposes, including hunting, nature study and photography.

(d) USBR and DWR shall be responsible exclusively for the funding specified in Article 5 of this Agreement. USBR and DWR shall not be responsible in any other manner for the acquisition, development, operation and maintenance of the mitigation lands by DFG.

5. Cost Sharing and Payment --

(a) USBR shall pay forty percent (40%) and DWR shall pay sixty percent (60%) of the costs incurred by DWR to

implement this Agreement. Such costs shall not exceed a total of $9 million, July 1985 dollars, plus or minus such amounts, if any, as may be justified by reason of ordinary fluctuations in construction cost indexes applicable to the type of construction involved herein. USBR's share of such costs shall be paid exclusively from funds made available to USBR to implement subarticle 12(a) of the SMPA.

(b) All costs incurred to continue to implement this Agreement after 50 years from the effective date hereof shall be the sole responsibility of DFG.

(c) The term "costs" shall include all administrative overhead, costs of liability insurance or pooling programs and other costs similar to those normally incurred by USBR which will be incurred by DWR in performance of the obligations under this Agreement.

(d) The United States shall pay to DWR the costs determined to be allowable by the Contracting Officer in accordance with the terms of this Agreement and with provisions of Federal Acquisition Regulations (FAR), Part 31, Subpart 31.6, 48 CFS Sections 31.601-31.603. If DWR uses any funds advanced pursuant to this Agreement for purposes not in accordance with this Agreement or not in compliance with FAR Part 31, Subpart 31.6, DWR shall reimburse USBR for the amount of any such improperly used funds.

(i) The USBR's share of costs incurred by DWR prior to the date of this Agreement plus the interest from the dates such costs were incurred, at the State Surplus Money Investment Fund rates, shall be paid in a lump sum payment following an audit of such costs by an authorized representative of the USBR, to be completed within six months after execution of this Agreement.

(ii) Prior to the dates on which DWR is to pay DFG in accordance with subarticles 3(a), 3(b), and 3(c), of this Agreement, USBR shall advance its contributions specified in this Article, in accordance with a billing statement furnished by DWR specifying the payments to be made.

(e) Each year on or before September 15, DWR shall furnish to USBR a proposed budget of the estimated costs to be incurred to implement this Agreement during the fiscal year beginning a year later on October 1, and the respective contributions of the parties. USBR shall notify DWR by the following September 15 of its full or partial approval of DWR's proposed budget. USBR's

approval shall not be unreasonably withheld. In the event that USBR does not approve all budgeted costs, such unapproved costs shall not be eligible for reimbursement by USBR until such time as they are mutually agreed upon by DWR and USBR. To facilitate USBR's review, each year's proposed budget should include a narrative description which adequately describes and explains all major aspects of the fiscal year's proposed program.

(f) Separate cost accounts shall be maintained by physical feature or descriptive title to permit ready audit.

6. Contingent on Availability of Funds --

The expenditure or advance of any money or the performance of any work by the United States hereunder which may require appropriation of money by the Congress or the allotment of funds shall be contingent upon such appropriation or allotment being made. No liability shall accrue to the United States in case such funds are not appropriated or allotted.

7. Notices --

All notices that are required to be given by one party to another shall be deemed to be given if delivered personally or if enclosed in a properly addressed, certified, postage prepaid envelope with return receipt requested, and deposited in a United States Post Office. Unless or until formally notified otherwise, the parties shall address all notices as follows:

Director, Department of Water Resources
P. O. Box 388
Sacramento, CA 95802

Director, Department of Fish and Game
1416 Ninth Street
Sacramento, CA 95814

Regional Director, Mid-Pacific Region
U. S. Bureau of Reclamation
2800 Cottage Way
Sacramento, CA 95825

The provisions of this Agreement will be binding upon the parties upon their signature.

IN WITNESS WHEREOF, the parties hereto have executed this contract on the date first written above.

Director
California Department of
Water Resources

Date:_____

Director
California Department of
Fish and Game

Date:_____

Director
Mid-Pacific Region United States
Bureau of Reclamation

Date:_____

SUISUN MARSH MONITORING AGREEMENT
Among
The Department of Water Resources
The Department of Fish and Game
and
The Bureau of Reclamation

November 1, 1985

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11/1/85

SUISUN MARSH MONITORING AGREEMENT
Among
The Department of Water Resources
The Department of Fish and Game
and
The United States Bureau of Reclamation

THIS Agreement dated this _____ day of _____, 1985, is hereby entered into among the California Department of Water Resources (DWR) and the California Department of Fish and Game (DFG) and the United States Bureau of Reclamation (USBR) to provide for the implementation of the monitoring program of the Plan of Protection (Plan) for the Suisun Marsh (Marsh).

A G R E E M E N T

1. Definitions - When used herein, the term:

(a) "Control Station" (Station) shall mean a location listed in Table II of the Suisun Marsh Preservation Agreement.

(b) "Electrical Conductivity" (EC) shall mean the electrical conductivity of a water sample measured in millimhos per centimeter (mmhos/cm) corrected to a standard temperature of 25 Celsius determined in accordance with procedures set forth in the publication entitled, "Standard Methods of Examination of Water and Waste Water," published jointly by the American Public Health Association, the American Water Works Association, and the Water Pollution Control Federation, 13th Edition, 1971, including such revisions thereof as may be made subsequent to the date of this Agreement which are approved in writing by the parties.

(c) "Suisun Marsh Preservation Agreement" shall mean that agreement dated _____ among DWR, DFG, the Suisun Resource Conservation District (SRCD), and the USBR detailing the construction and operation and responsibilities for the Plan of Protection.

(d) "Individual Ownership" shall mean separately owned parcels of land in the Marsh, other than those on Roe, Ryer, Freeman, and Snag Islands. Contiguous parcels owned by the same legal entity comprise a single Individual Ownership.

(e) "Monitored Ownership" shall mean those Individual Ownerships with SRCD ownership numbers 406, 416, 422, 501, 504, 513, 702, 714, 804, and 905, plus the eastern portion of the Grizzly Island Wildlife Area and the Joice Island Wildlife Area.

(f) "Plan of Protection" (Plan) shall mean the plan prepared by DWR, dated February 1984, to mitigate the effects of the State Water Project (SWP) and the Central Valley Project (CVP) upon the Suisun Marsh.

2. Objectives

The objectives of this Agreement are to describe a methodology and define the scope of DWR's, USBR's and DFG's obligations to carry out an appropriate monitoring program to meet the objectives of the Suisun Marsh Preservation Agreement.

3. Monitoring

(a) The following water monitoring will be done:

(i) Channel Water Quality (EC)

The EC at the Control Stations will be monitored by DWR with continuous recorders. When the facilities constructed pursuant to subarticle (a) of Article 8 of the Suisun Marsh Preservation Agreement Become Operational, EC data from a location in the western Marsh will be telemetrically reported. If additional facilities are constructed, additional stations will be telemetered if necessary to assure compliance with the applicable water quality standards in Article 3 of the Suisun Marsh Preservation Agreement.

(ii) Diversion and Drain Water Quality

A point on each Monitored Ownership shall be monitored continuously for EC by DWR.

(iii) Standing Surface Water

The EC of standing surface water at each soil water salinity sampling site identified in subarticle (a)(v) shall be determined monthly by DWR.

(iv) Water Level

DWR shall maintain a continuous recorder to measure water elevation on each of the Monitored Ownerships. At each of the Control Stations DWR shall maintain a continuous recorder to measure water elevation for five years.

(v) Soil Water Salinity

Soil water salinity will be monitored by DWR at 40 to 50 sites on Monitored Ownerships and one site on Individual Ownership 423. Soil water salinities will be measured monthly following the methodology described in Appendix B of the Plan which is made a part of this Agreement.

(b) The following vegetative monitoring will be done using the methodologies described in the Plan:

(i) Plant Survey

The species composition of vegetation on lands within 35 meters of each soil water monitoring site will be determined by DFG in August or September of each year. The percent of cover contributed by each plant species present on the sample site will be determined by DFG each year.

(ii) Seed Production

The seed production of alkali bulrush and fat hen present on lands within 35 meters of each soil water monitoring site will be determined by DFG each year.

(iii) Marsh-Wide Plant Survey

The overall vegetative composition of the Marsh shall be determined by DFG every third year beginning in 1985 utilizing color aerial photography in conjunction with ground verification. DWR shall obtain and DFG shall analyze the aerial photographs. These aerial photos will also be used by DFG to determine any net acreage changes in preferred salt marsh harvest mouse habitat in compliance with the Section 7 Determination, Suisun Marsh Management Study by the U. S. Fish and Wildlife Service dated December 7, 1981.

4. Wildlife

(a) Species and number of waterfowl in the Marsh will be determined from aerial surveys carried out by DFG from September through January of each year at DFG expense.

(b) If the marsh-wide plant survey (Article 3(b)(iii)) indicates a significant change, as identified in the Section 7 Determination, in preferred habitat within the Marsh for the salt marsh harvest mouse, then the parties shall determine whether any surveys of the population of the mouse are necessary. If such surveys are necessary,

then DWR will promptly arrange for such surveys to be made.

5. Fish Habitat

(a) DWR or DFG will arrange for or conduct studies of the annual abundance of young striped bass and Neomysis in Montezuma Slough.

(b) DWR will contract with DFG or, in consultation with DFG, contract with other knowledgeable experts to conduct studies to determine the impact of predators and disruption of fish associated with the Montezuma Slough Control Structure. The need for additional fishery monitoring will be evaluated as each subsequent unit Becomes Operational.

6. Reports

(a) All reports and data compiled under this Agreement shall be promptly distributed to the parties and SRCD. Preliminary data and the report described below will be made available by DWR to interested parties upon request as soon as possible following collection and completion, respectively.

(b) A monthly summary of EC data from the Control Stations will be provided by DWR to the other parties and SRCD. Weekly or daily data will be provided in response to specific requests by the parties or SRCD.

(c) A report of data for each water year will be produced jointly by DWR and DFG which will include: (1) a summary of the channel, diversion, drain, soil water salinity and water level measurements; the plant survey and production measurements; the waterfowl population surveys, (2) every third year the status of the overall vegetative composition of the Marsh, (3) results of any surveys made of salt marsh harvest mouse populations, (4) comparisons of soil water, applied water, and channel water salinities, and plant production to demonstrate the effectiveness of the plan and identify areas where additional action is needed, (5) results of other studies as they become available, and (6) conclusions and recommendations on modification of the monitoring program to achieve its objectives. This report will be completed by April 1 of each year, or four months after a summary of the water monitoring data is available, whichever is later.

7. Costs

(a) USBR shall pay Forty Percent (40%) and DWR shall pay Sixty Percent (60%) of the costs incurred to implement Articles 3, 4(b), 5(b), and 6.

(b) The Fish Habitat studies identified in Article 5(a) shall be funded through the Interagency Ecological Study Program for the Sacramento-San Joaquin Estuary, and not through funds provided herein.

(c) Funding for monitoring on Individual Ownerships as provided in Subarticles 3(a)(ii) through 3(a)(v), 3(b)(i), and 3(b)(ii) shall terminate on September 30, 1990.

(d) The term "costs" shall include all administrative overhead, costs of liability insurance or pooling programs and other costs similar to those normally incurred by USBR which are incurred by DWR in performance of this Agreement.

(e) The United States shall pay to DWR the costs determined to be allowable by the Contracting Officer in accordance with the terms of this Agreement and with provisions of Federal Acquisition Regulations (FAR), Part 31, Subpart 6, 48 CFR Sections 31.601-31.603. If DWR uses any funds advanced pursuant to this Agreement for purposes not in accordance with this Agreement or not in compliance with FAR Part 31, Subpart 6, DWR shall reimburse USBR for the amount of any such improperly used funds.

(i) The USBR's share of costs incurred by DWR prior to the date of this Agreement but after January 1, 1979 plus the interest from the dates such costs were incurred, at the State Surplus Money Investment Fund rates, shall be paid in a lump sum payment following an audit of such costs by an authorized representative of the USBR, to be completed within six months after execution of this Agreement.

(ii) On or before the first day of each month, after the date of this Agreement, USBR shall advance its contributions specified in this Article, in accordance with a billing statement furnished by DWR regarding expenditures estimated to be incurred during the upcoming month. Adjustments for overpayments or underpayments during a quarter shall be made in the quarter immediately following. Advances will be maintained at a level commensurate with current needs.

(f) Each year on or before September 15, DWR shall furnish to USBR a proposed budget of the estimated costs by quarter to be incurred under Articles 3, 4(b), 5(b), and 6 of this Agreement during the fiscal year beginning a year later on October 1, and the respective contributions of the parties. USBR shall notify DWR by the

following September 15 of its full or partial approval of DWR's proposed budget. USBR's approval shall not be unreasonably withheld. In the event that USBR does not approve all budgeted costs, such unapproved costs shall not be eligible for reimbursement by USBR until such time as they are mutually agreed upon by DWR and USBR. To facilitate USBR's review, each year's proposed budget should include a schedule of estimated costs by each monitoring requirement identified in Articles 3, 4(b), 5(b), and 6, or by descriptive title, supplemented with a narrative description which adequately describes and explains all major aspects of the fiscal year's proposed program.

(g) Separate cost accounts shall be maintained by physical feature or descriptive title to permit ready audit.

8. Miscellaneous Provisions

(a) By October 1 of each year, DFG shall submit a budget to USBR and DWR for approval of the work for which DFG is to be reimbursed. The parties may mutually agree to have the work done by someone other than DFG.

(b) DWR agrees to pay DFG the cost of performance hereunder and to pay actual expenses as often as monthly in arrears.

(c) The expenditure of any money and the performance of any work by the United States hereunder which may require appropriation of money by the Congress or the allotment of funds shall be contingent upon such appropriation or allotment being made. No liability shall accrue to the United States in case such funds are not appropriated or allotted.

(d) DWR will make all reasonable attempts to maintain full and complete records at all monitored sites provided for by this Agreement. DWR will be excused from monitoring at a site at times when monitoring is impeded by temporary equipment breakdowns, physical conditions, or lack of right of access. However, DWR shall immediately notify DFG of these occurrences. DWR shall make all reasonable efforts to expeditiously replace faulty equipment and reestablish monitoring.

(e) Unless otherwise expressly provided, all management and operational decisions necessary to implement this Agreement shall be by mutual agreement of the parties.

9. Review

During the year following each fifth year of data collection, or at other times when requested by one of the parties to

this Agreement, the parties will review the Agreement and identify any modifications appropriate for accomplishing its objectives. Any modifications shall be made by amending this Agreement and implementation of such modifications shall be subject to any necessary approvals by control agencies. It is the intent of the parties to reduce the scope of the monitoring program, particularly monitoring on Individual Ownerships, as soon as sufficient information is available to confirm the salinity relationships. The monitoring on Individual Ownerships shall terminate on September 30, 1990 unless the parties mutually agree otherwise.

10. Term of Agreement

This Agreement and any amendments hereto shall continue in full force and effect until terminated by the written agreement of the parties. SRCD shall be notified prior to any such termination.

11. Amendments

This Agreement may be amended by mutual agreement of DWR, DFG, and USBR. SRCD shall be notified of any proposed amendments.

12. Notices

All notices that are required either expressly or by implication to be given by one party to another shall be deemed to be given if delivered personally, or if enclosed in a properly addressed postage prepaid envelope with return requested and deposited in a United States Post Office. Unless or until formally notified otherwise, the parties shall be addressed as follows:

Director, Department of Water Resources
P. O. Box 388
Sacramento, CA 95802

Director, Department of Fish and Game
1416 - Ninth Street
Sacramento, CA 95814

U. S. Bureau of Reclamation
2800 Cottage Way
Sacramento, CA 95825

IN WITNESS WHEREOF, the parties hereto have executed this Agreement on the date first written above.

_____
Director, Department of Water Resources

Date:_____

_____
Director, Department of Fish and Game

Date:_____

_____
Regional Director, Mid-Pacific Region
United States Bureau of Reclamation